

FINAL
ENVIRONMENTAL ASSESSMENT
SAN ANDRES PIPELINE REPAIR
HOLLOMAN AIR FORCE BASE
OTERO COUNTY, NEW MEXICO



U.S. Air Force
49th Fighter Wing
Holloman Air Force Base, New Mexico

April 16, 2007

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FINDING OF NO SIGNIFICANT IMPACT FOR THE SAN ANDRES WATER LINE HOLLOMAN AIR FORCE BASE OTERO COUNTY, NEW MEXICO

Need for Action: The United States Air Force (U.S. Air Force) is proposing to replace the San Andres water line at the Boles Well Field, the northernmost field of the Boles Wells Water System Annex (BWWSA) at Holloman Air Force Base (AFB), near Alamogordo, New Mexico. The existing 12,300 linear feet of 16-inch steel reinforced concrete cylinder pipe are over 50 years old and deteriorated due to age. The project is needed to replace the existing water line, which is the only connection to the southern section of the BWWSA and is critical infrastructure for Holloman AFB. The purpose of this action is to ensure a reliable water supply to Holloman AFB, which is essential to the 49th Fighter Wing's mission.

Purpose of the Environmental Assessment: The National Environmental Policy Act of 1969 requires Department of Defense installations to evaluate the potential environmental impacts of a proposed action and any associated alternative actions prior to the implementation of a proposed action. An Environmental Assessment (EA) has been prepared to address the potential for impacts associated with replacement of the water line. The EA identifies the potential impacts that may result if the proposed action is implemented.

Alternatives Analyzed: In addition to the Preferred Alternative, two alternatives were carried forward for analysis in the EA – Alternative B: No Action and Alternative C: Remove and Replace. All alternatives occur on lands owned by the U.S. Air Force or within an existing easement along county roads, as portions of the existing water line are buried under Taylor Ranch Road and Old El Paso Highway. The existing easement is 25 feet on each side of the middle of the road. All proposed work would occur within that easement.

Preferred Alternative: Placement of the new pipeline would be within the road corridor, but outside of the driving surface as far as possible to minimize interference if road

widening occurs and to minimize travel disruption during any needed pipeline repairs. On the northern half of the pipeline, the new pipeline would be placed adjacent to the existing. The existing pipeline would be abandoned in place.

Alternative B: No Action, the U.S. Air Force would not replace the existing San Andres water line. Under this alternative, repairs due to leaks and bursts would continue as needed.

Alternative C: Remove and Replace, the existing concrete pipe would be removed and the new PVC pipe would be placed in the existing alignment. Removal of the existing concrete pipe would likely involve some onsite crushing, loading debris onto trucks, and hauling material to the regional landfill for disposal in accordance with applicable regulations.

Summary of Environmental Impacts: The analysis focused on the following environmental resources as a result of public, agency, and internal scoping: transportation, noise, safety, air quality, visual resources, waste management, cultural resources, land use, socioeconomics, environmental justice, soils, water resources, and biological resources. Details of the analysis are presented in the EA. Potential impacts would be avoided or minimized by using best management practices. The analysis in the EA concluded that there will be no significant impacts from implementation. This conclusion is based on the following:

1. It is reasonably expected that there will be no significant impact on historical, archaeological, or cultural resources in the project area by the Proposed Action alternative.
2. There will be no significant impact on the flora, fauna, endangered species, or natural resources in the project area by the Proposed Action alternative.
3. The Preferred Alternative will not adversely impact the social or economic structure of Holloman AFB, the City of Alamogordo, or the adjacent communities.
4. There will be no significant, long-lasting, negative effects of project implementation on soils, water resources, or air quality in the project area.

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Public Availability: The EA has undergone a 30-day public comment period in accordance with the recommendations of 32 Code of Federal Regulations Part 989. Comments received were considered and incorporated where applicable.

Conclusion: Based on the information and analysis presented in the Final EA developed in accordance with the requirements of the National Environmental Policy Act of 1969, the Council on Environmental Quality regulations, and implementing regulations set forth in 32 CRR 989 as amended, and review of public and agency comments submitted during the 30-day public comment period, I conclude that implementation of the Preferred Alternative would not result in significant impacts to the quality of the human or natural environment. Accordingly, a finding of no significant impact is warranted for replacement of the San Andres water line, therefore the preparation of an environmental impact statement is not required.


DAVID L. GOLDFEIN
Brigadier General, USAF
Commander

MAY 9 2007

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Prepared for:

U.S. Air Force
49th Fighter Wing
Holloman AFB

April 16, 2007

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1.0 INTRODUCTION

1.1 INTRODUCTION

This Environmental Assessment (EA) addresses a proposal by the United States Air Force (U.S. Air Force) to replace the 2.3-mile long San Andres water line at the Boles Wells Field, the northernmost field of the Boles Wells Water System Annex (BWWSA) at Holloman Air Force Base (AFB), near Alamogordo, New Mexico. This EA discloses the direct, indirect, and cumulative environmental effects that would result from the proposal as required by the National Environmental Policy Act of 1969 (NEPA, 42 United States Code [USC] 4321-4347), the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500-1508), Air Force Instruction (AFI) 32-7061 – Environmental Impact Analysis Process (EIAP) which adopts the current Title 32, Code of Federal Regulations, Part 989 (32 CFR Part 989), as the controlling document on the Air Force EIAP, and applicable Department of Defense (DOD) directives.

The environmental resources of the project area that would potentially affect or be affected by the proposed project are addressed in this EA. These resources include: land use, cultural resources, physical resources, biological resources, socioeconomics, and environmental justice. As such, this EA provides the decision maker with pertinent information regarding the environmental impacts of implementing the proposed action and alternatives including the no action alternative, therein providing a basis for choice among the alternatives. If the decision maker determines that this project has significant impacts, as defined by 40 CFR 1508.27, then an environmental impact statement (EIS) would be prepared for the project. If no significant impacts are identified, a finding of no significant impact (FONSI) will be signed approving the alternative selected. Additional documentation, including more detailed analyses of project-area resources, may be found in the project administrative record.

The EA is organized into the following seven chapters and appendices.

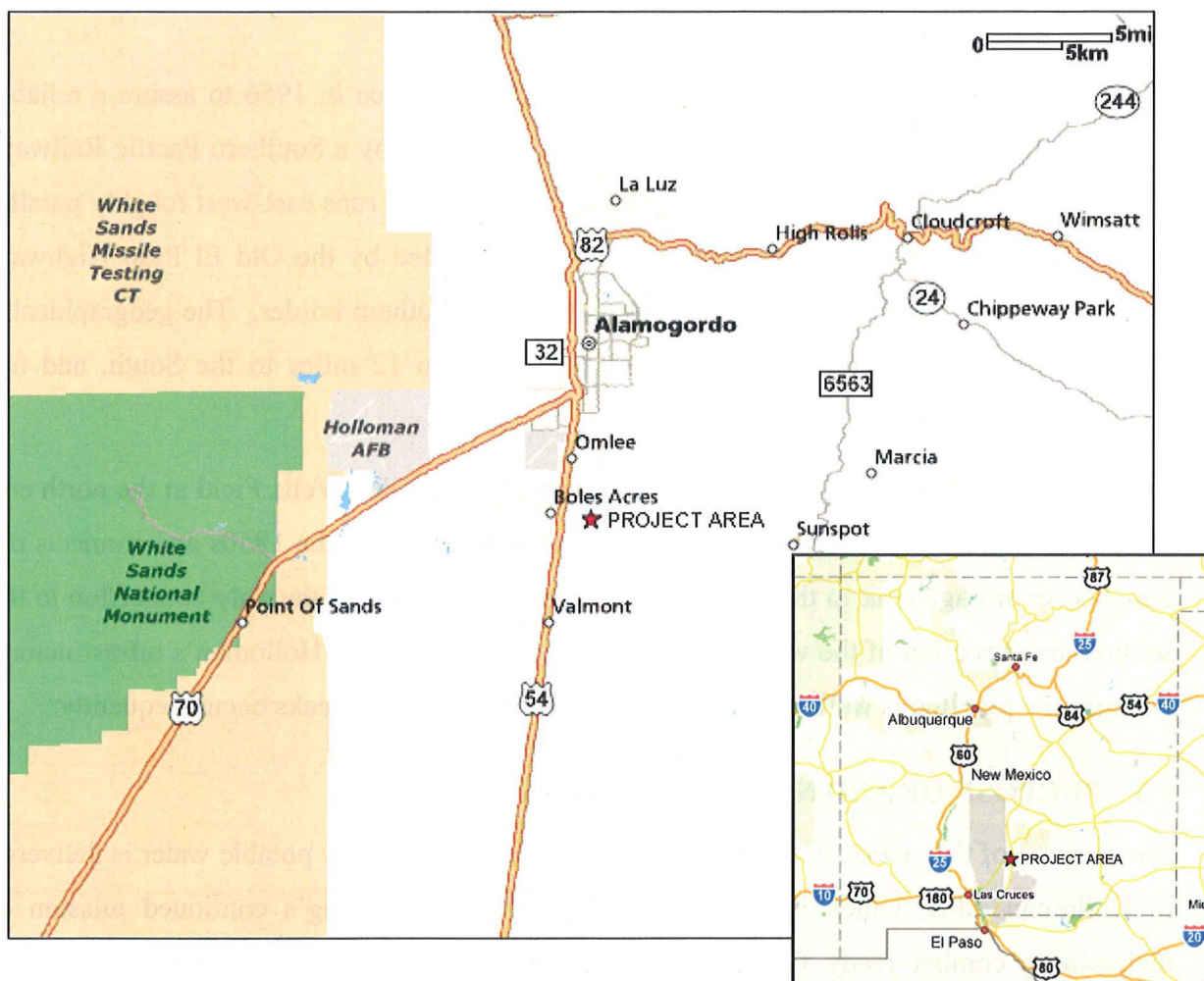
- *Chapter 1 – Introduction:* This chapter includes the background and purpose of and need for the project.
- *Chapter 2 – Description of Proposed Action and Alternatives:* This chapter presents a detailed description of the alternatives that were considered. A summary of

regulatory compliance requirements and issues along with the scope of analysis are addressed. A summary comparison of the environmental consequences associated with each alternative is also presented.

- *Chapter 3 – Affected Environment:* This chapter describes the affected environment – those resources that have the potential to be affected by implementation of the Proposed Action and alternatives.
- *Chapter 4 – Environmental Consequences:* This chapter describes the environmental effects of implementing the alternatives. The analysis is organized by resource and considers direct and indirect effects.
- *Chapter 5 – Cumulative Effects and Irreversible and Irretrievable Commitment of Resources:* This chapter provides an analysis of other recent, ongoing, or reasonably foreseeable projects in the affected area with the potential to contribute to cumulative impacts to resources in the area.
- *Chapter 6 – List of Preparers:* This chapter lists those involved in the development of this document and other associated analyses.
- *Chapter 7 – Persons and Agencies Contacted:* This chapter briefly describes the public involvement process and lists those agencies, interested groups, and members of the public that were consulted or provided comments during the analysis process.
- *Appendices* – The appendices provide additional detailed information in support of the EA to assist the decision maker in making an informed decision.

1.2 BACKGROUND

Holloman AFB was originally established as the Alamogordo Air Field in 1942. Located 5 miles west of Alamogordo, New Mexico (Figure 1-1), it was renamed Holloman AFB on January 13, 1948 after Colonel George Holloman, a pioneer in guided missile research. Holloman AFB continues to serve at the forefront of military operations and supports approximately 21,000 active-duty, Guard, Reserve, retirees, DOD civilians, and their family members, and serves as the location for the German Air Force's Tactical Training Center. The 49th Fighter Wing is the host wing at Holloman AFB.

Figure 1-1. General Project Location Map.

1.2.1 Boles Wells Field, San Andres Pipeline, Background

The BWWSA begins approximately 5 miles south of downtown Alamogordo, adjacent to the western foothills (bajadas) of the Sacramento Mountains. The primary purpose of the BWWSA is to help provide a continuous source of potable water for Holloman AFB. The U.S. Air Force has jurisdiction over 6,922.7 acres in the BWWSA, which includes public lands withdrawn for military purposes and Air Force lands owned in fee simple. The BWWSA is comprised of three well fields referred to as Boles, Douglas, and San Andres, dispersed over about 12 miles north-south. The southern portion of the BWWSA borders McGregor Range of the U.S. Army's Fort Bliss. Lands to the east of the annex are mostly under jurisdiction of the Bureau of Land Management (BLM) and the Lincoln National

Forest. In between, and to the west of the well fields is a mosaic of private land, BLM, New Mexico State Trust and New Mexico State Park lands.

The Boles Wells property was acquired by the U.S. Air Force in 1956 to assure a reliable water source for Holloman AFB. It is bordered on the west by a Southern Pacific Railways main line and U.S. Highway 54 (US 54). Taylor Ranch Road runs east-west roughly parallel to the southern border, and the eastern border is paralleled by the Old El Paso Highway. Residential tracts adjoin the north line and parts of the southern border. The geographically separated San Andres and Douglas Well Fields are 3 to 12 miles to the South, and not affected by this project.

The San Andres water line is located at Holloman AFB's Boles Wells Field at the north end of the BWWSA. The San Andres water line was constructed in the 1950s and connects the San Andres storage tank to the Boles Wells Field storage tank. It the only connection to the southernmost section of the well field, and as such it is critical to Holloman's infrastructure. Because the pipeline is well beyond its original life expectancy, breaks occur frequently.

1.3 PURPOSE OF AND NEED FOR ACTION

The purpose of this action is to ensure that a reliable supply of raw potable water is delivered to Holloman AFB, which is essential to the 49th Fighter Wing's continued mission of maintaining combat ready fighter pilots capable of conducting operations worldwide as tasked by the national command authority. The Boles Wells Field has been identified as a critical water system component in a Water Vulnerability Assessment. The existing 12,300 linear feet of the San Andres water line is over 50 years old and has deteriorated due to age. The project is needed to replace the existing water line, which is the only connection to the southern section of the BBWSA and is critical infrastructure for Holloman AFB.

2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Chapter 2 describes the alternatives considered for the proposed project and presents the alternatives in comparative form, providing a basis for choice as required by the CEQ regulations (40 CFR §1502.14d). Holloman AFB personnel from a variety of departments (e.g., environmental, engineering, construction) worked together to develop alternatives for repairing or replacing the water line. Field surveys and resource information of the proposed project area along with experience of base personnel were used to develop a list of resource concerns to be considered in the analysis. Using information gained from these efforts, the Proposed Action was refined to have a minimal impact on the environment.

Actions analyzed in detail by this EA are the No Action and Proposed Action alternatives and a third alternative – Alternative C: Replacement within the Existing Alignment. Full descriptions of the alternatives are included below. Other alternatives that were considered but not carried forward for analysis are discussed in Section 2.4. The last section in this chapter provides a brief summary of the environmental consequences of the alternatives. A more detailed analysis of the effects on the affected resources follows in Chapter 4: *Environmental Consequences*.

2.1 ALTERNATIVE A: PROPOSED ACTION

The U.S. Air Force proposes to minimize vulnerabilities of the San Andres water line to ensure adequate water supply to Holloman AFB by installing a new pipeline in an alignment generally adjacent to the existing pipeline (Figures 2-1 and 2-2). The existing pipeline is a gravity driven, 16-inch steel reinforced concrete cylinder pipe that is over 50 years old. Portions of the southern half of the existing pipeline are buried under Taylor Ranch Road and the Old El Paso Highway and would be abandoned in place. The preferred material for the new pipe is 18-inch polyvinyl chloride. The pipe compound will meet cell class 12454 per ASTM D1784 “Standard Specification for Polyvinyl Chloride (PVC) Compounds and Chlorinated Polyvinyl Chloride (CPVC) Compounds” and shall meet the requirements of AWWA C905 “Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 14-inch through 48-inch, for Water Transmission and Distribution.” Pressure relief valves (PRVs) and fittings located along the length of the pipe (due to gradient variations) would be replaced as part of the new pipeline, which would remain gravity driven.

The 2.3-mile pipeline would be replaced under a design/build contract. Placement of the new pipeline route would occur on lands owned by the U.S. Air Force or within an existing easement along county roads (i.e., the southern 1.05 miles of the pipeline route occurs adjacent to Taylor Ranch Road and the Old El Paso Highway) and crosses underneath several private driveways that originate from the Old El Paso Highway). The existing easement is 25 feet on each side of the middle of the road; all proposed work would occur within that easement. Land adjacent to the affected road consists of both private and BLM lands. Placement of the new pipeline would be within the road corridor, but outside of the driving surface and as far east as possible to mitigate the need for disturbance if future development or road widening occurs and to minimize travel disruption during any needed pipeline repairs. The construction contract would require work to minimize disruption of access to residences and other facilities along the route. Where access would be disrupted for longer than a few hours, alternate access would be provided. On the northern half of the pipeline, which is on U.S. Air Force land (Figure 2-1), the new pipeline would be placed adjacent to the existing pipeline.

Figure 2-1. Existing and Proposed Water Line Alignment.

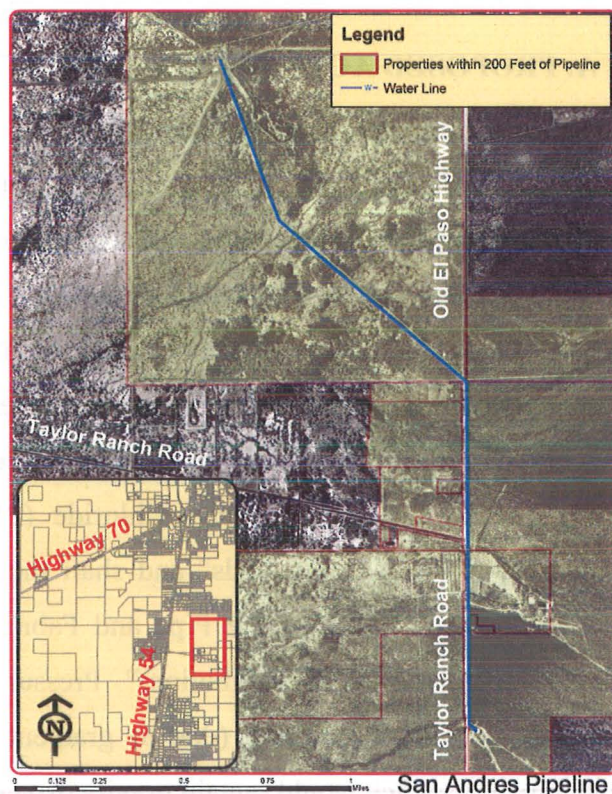
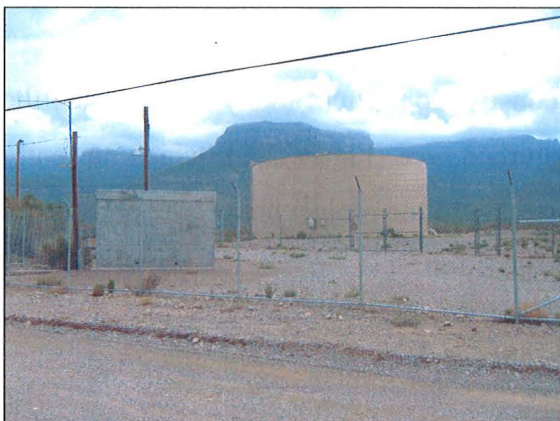


Figure 2-2. Project Area Photographs and Description of Pipeline Alignment.

The pipeline runs from the San Andres storage tank at the southern end of the project area on Taylor Ranch Road (left photograph above, looking east) to a second (north) storage tank location at the Boles Wells Field (right photograph above, looking west).



The pipeline crosses under Taylor Ranch Road and runs north adjacent to it and Old El Paso Highway (left photograph above, looking south) until it reaches U.S. Air Force property at the Boles Wells Field (right photograph above, looking Northwest), at which point it runs Northwest to the north storage tank on the Boles Wells Field Road.

2.1.1 Construction Activity

Construction of the new pipeline may begin as early as fall of 2007, although a project start date has yet to be determined. Project design would take approximately 120 days and construction approximately 200 days (for a total anticipated project design/build duration of 320 days). Construction would consist of using an excavator to dig a trench up to 6-feet deep and 6-feet wide within which the new pipeline would be placed. Activities related to excavation and installation of the new pipeline would result in up to 7 acres of ground disturbance (2.3-mile long corridor by 6-foot wide trench plus up to 10 feet on each side for potential construction-related disturbance). The distance from the existing pipeline would vary but would generally be parallel to the current pipeline alignment. All disturbed surfaces

and property would be returned to their original (or improved) condition following installation of the new pipeline.

Staging of equipment and materials used during construction would likely occur inside the fence to the Boles Wells Field in a previously disturbed area (Figure 2-3), which currently provides access to the site for repairs. To provide access to the project area some portions of the existing fence may need to be replaced after construction.

Figure 2-3. Proposed Staging Area



2.1.2 Operations

Once installed the new pipeline would provide water to Holloman AFB much the same as the pipeline it is replacing. The pipeline would not supply water to any other sources or users and would tie into existing connections to allow for normal operations. Once the new pipeline is installed, maintenance or repairs would be infrequent and the need to access the site would be reduced.

2.1.3 Actions to Reduce Potential for Environmental Impacts

Construction activity would disturb up to 7 acres of land, the majority of which has already been disturbed by activity related to road corridor construction and use and by placement and maintenance of the original pipeline. Several methods would be employed to minimize the potential for new impacts from construction. All construction or soil disturbance activities

associated with the pipeline replacement would occur on U.S. Air Force property or within an easement to the county roads. Contract language would be included to specify the limit of permissible ground disturbance allowed during new pipeline construction. Any plans, standards, or practices required by local, state, or federal law or U.S. Air Force regulation would be observed. Some examples of applicable best management practices (BMPs) and other standard measures commonly used by Holloman AFB and included in construction contracts for resource protection are provided below. A comprehensive list can be found in project files at Holloman AFB.

Typical measures that would be taken if applicable include the following:

- A storm water permit may be required and a Storm Water Pollution Prevention Plan (SWPPP) would be prepared by the construction contractor in accordance with any local, state, and federal requirements. The SWPPP would describe all methods used to control storm water runoff and soil erosion during and following construction.
- Heavy equipment and other construction vehicles would not be allowed in areas beyond the narrow limit of disturbance.
- By terms of contract, any property or structures, including those of adjacent landowners, removed or damaged during construction would be repaired or replaced.
- Any work in arroyos would be addressed under Section 404 of the Clean Water Act (CWA), if applicable. Care would be taken if disturbance occurs in any of these areas to minimize obstruction of drainage; land would be recontoured after construction to allow unimpeded water flow.
- Temporary erosion and sedimentation control measures would be implemented in compliance with the National Pollutant Discharge Elimination System (NPDES) and Section 404 permit programs.

BMPs would be used to control dust and soil erosion during construction. Specifications regarding temporary controls for erosion, sediment and water pollution would be included in the construction documents. The portion of construction occurring in the private driveways is approximately 0.5 mile, (~20% of the total project distance), although only five driveways would likely be impacted, and it is estimated that construction in this area could take about 40 days. Access to private properties would be maintained and the excavated trench may be covered at night or otherwise cordoned off for safety.

2.2 ALTERNATIVES TO THE PROPOSED ACTION

The alternatives described in this section are being carried forward for full consideration in the analysis.

2.2.1 Alternative B: No Action Alternative

The No Action alternative provides a baseline condition from which to evaluate the potential consequences of not replacing the pipeline. Under this alternative the U.S. Air Force would not replace the existing pipeline. The deteriorated concrete pipeline conveys water to Holloman AFB and is critical for maintaining a reliable water supply to the base from the BWWSA.

The existing pipeline is approximately 50 years old and consists of 12,300 linear feet of 16-inch steel reinforced concrete cylinder pipe. PRVs are located along the length of the pipe due to gradient variations. The pipeline leaks and bursts on a recurring basis; continued maintenance is not cost effective. Under this alternative, repairs would continue to be made as needed.

The pipeline currently runs under a portion of the Taylor Ranch Road and crosses to the west side of the road near a corral on private land. Grazing occurs on some adjacent private lands. Other private property adjacent to the project area is used for residential development (there are six houses and five driveways along the length of the road). Adjacent property owners would continue to be inconvenienced (e.g., disruption of traffic because of the presence of equipment in the roadway during repairs).

The county is proposing to chip seal Taylor Ranch Road in 2007. Future repairs to the existing pipeline would require excavation beneath the new road surface. In addition, the cost of future repairs to the pipeline within the roadway would increase because of the need to patch the new road surface after excavation and repair.

2.2.2 Alternative C: Remove and Replace within the Existing Alignment

This alternative considered removing the existing pipe and placing the new pipe in the existing alignment, portions of which are under Taylor Ranch Road. The old 16-inch line would be removed and a new 18-inch PVC pipe would be installed approximately in the same trench. Removal of the existing concrete pipe would likely involve some onsite

crushing, loading debris onto trucks, and hauling material to the regional landfill. The area disturbed by excavation would be up to 6 feet wide by 2.3 miles long, and the additional area that could be disturbed temporarily by staging and moving of equipment and worked is estimated at 10 feet on either side of the trench. All surfaces and property would be returned to their original (or improved) condition as part of the process.

Replacing the pipe in the same alignment would disrupt service from the San Andres storage tank to the north Boles Wells Field storage tank for the duration of the project. In addition, because more of the construction would occur underneath the road surface rather than in the easement, traffic disruption would be more extensive. Furthermore, future repairs to the pipeline would require potential disruption of traffic since portions of the pipeline would remain under Taylor Ranch Road.

2.3 METHODOLOGY FOR ALTERNATIVE IDENTIFICATION

2.3.1 Minimum Selection Criteria

Evaluation criteria for the alternatives considered included the following:

- Reliable supply line
- Sufficient capacity
- Minimum 50 year life expectancy
- Compatible with existing system
- Tie directly into existing system
- Minimum conversion downtime.

2.3.2 Desirable Selection Criteria

In addition to the minimum requirements identified above, the following characteristics were also considered to be desirable for the selected alternative:

- Cost effective route and method
- Minimal disruption of normal traffic and residential property access
- Maintain harmony with the environment
- Route compatible with Otero County and Holloman AFB short and long term infrastructure plans.

2.4 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD

In addition to the alternatives described in detail, three other alternatives were considered during project analysis. Considered in the analysis of these alternatives were future county plans to improve the existing road. These alternatives are described below along with the rationale for why they were eliminated from further consideration.

2.4.1 Slip Line Existing Pipe

This technique was considered as a method for renovating the existing pipeline. Severely damaged pipelines can be replaced using this method when existing capacity is not an issue. Slip lining involves inserting a new pipe into an existing line by either pulling or pushing continuous or short-length pipes and shoring up the old pipe. Because the new pipe must be smaller than the existing pipe capacity would be reduced. This approach also requires periodic excavations along the route to enable the insertion of new piping, to clear obstructions, and to repair collapsed sections. Consequently, reoccurring disruptions of road traffic would be necessary. This alternative was dismissed from further analysis because it is anticipated that future demands for water capacity would be greater than current demands.

2.4.2 Pipe Burst Existing Pipe

Pipe bursting is a trenchless method of replacement that allows for upsizing of the original pipe, which would allow for expanded capacity. Using this method, the existing pipe is opened by a bursting tool and forced outward displacing the fragments into the surrounding soil, while simultaneously pulling the new pipe into place. This would cause the existing road surface to heave. While this alternative would allow for expanded capacity, it would place the pipe in the existing alignment, a portion of which is beneath Taylor Ranch Road, and could result in traffic disruptions during future repairs due to disturbance of the new road surface. It would also require for periodic excavations for access to clear obstructions. In addition because of the large size of the existing pipe, the method would not work well. Based on the alignment within the road and the size of the pipe, this alternative was not considered to be a viable alternative and was eliminated from further study.

2.4.3 Install New Pipe in New Alignment Parallel to but away from Existing Road; Abandon Old in Place

This alternative considered placing the pipeline further away from Taylor Ranch Road outside the existing easement. While this would reduce the potential for future problems with road repair and potential expansion, individual agreements would have to be negotiated with the adjacent landowners. This alternative was dismissed from further analysis because of the anticipated difficulty of the negotiation process and the adequacy of the existing road easement.

2.5 ENVIRONMENTAL IMPACT ANALYSIS PROCESS

AFI 32-7061 requires the U.S. Air Force to address environmental impact analysis through consideration and documentation of the environmental effects of the proposed action in the applicable format (i.e., an EA). The U.S. Air Force must analyze reasonable alternatives to the proposed action and the “no action” alternative in all EAs, as fully as the proposed action alternative. Every EA must lead to either a FONSI, a decision to prepare an EIS, or no action on the proposal. Procedures specified in the EIAP are essential to achieve and maintain compliance with NEPA and the CEQ regulations.

2.5.1 Public and Agency Involvement

Intergovernmental notification prior to making a detailed statement of environmental impacts is required by Executive Order (EO) 12373, *Intergovernmental Review of Federal Programs*. Through the Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) process, the proponent of an action is required to notify concerned, federal, state, and local agencies and allow them sufficient time to evaluate potential environmental impacts of a proposed action.

An informal meeting with the county commissioners was held on August 17, 2006 to provide an overview of the project and to solicit concerns. On March 15, 2007 a coordination letter soliciting comments on the proposed project was mailed to landowners and concerned agencies such elected officials, vested interest groups, and private individuals (Appendix A).

Through this initial process and through internal project review, a list of environmental concerns was identified to address in the EA. These were based on the nature of the proposed work and an understanding of local conditions. They include:

- Potential for impacts to sensitive or protected plant and animal species and/or their habitat, if present
- Potential for impacts to cultural resources
- Potential for spread of invasive plant species from ground disturbance
- Potential for increased particulate matter due to soil disturbance and construction
- Potential for increased noise
- Potential for increased soil erosion and water pollution.

Opportunity to comment on the selection criteria, the scope, and this resulting analysis, was provided to federal and state agencies, the City of Alamogordo, Otero County and to concerned citizens by mail; and, by a public meeting held in Alamogordo, New Mexico on March 28, 2007, within three weeks of the release of the Public Draft EA. A summary of the meeting and comments received will be provided in Appendix C.

2.5.2 Regulatory Compliance and Permit Requirements

This EA has been prepared principally to comply with NEPA. It also addresses the proposed action's compliance with other applicable environmental laws and regulations. The U.S. Air Force or construction contractor for the project would acquire any permits and licenses required for the pipeline replacement. Environmental laws and regulations that may require permits include, but are not limited to: Historic Site Act of 1935; Clean Air Act of 1970 (CAA); Noise Control Act of 1972; Endangered Species Act of 1973 (ESA); CWA of 1977; National Historic Preservation Act of 1979; and Fish and Wildlife Conservation Act of 1980.

Table 2-1 summarizes the requirements of major environmental laws and reviews other key federal environmental regulatory requirements applicable to the proposed pipeline project. Applicable permits or permit modifications that may be required for implementation of an action alternative are listed as well. The responsible agency with whom coordination may be required is provided in the table. No permits would be required for the No Action alternative.

Table 2-1. Potential Regulatory Requirements for the Action Alternatives.

Regulation	Requirement	Agency
National Environmental Policy Act	Requires federal agencies to integrate environmental values into their decision-making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions.	Council on Environmental Quality, U.S. Air Force
Clean Water Act	<p>The Clean Water Act regulates development activities in or near streams or wetlands.</p> <p>Section 404 requires a permit for dredge and fill within wetlands or other waters of the U.S. A joint application to obtain a permit from the Army Corps of Engineers and water quality certification from New Mexico Environment Department may be needed.</p> <p>Section 402, National Pollutant Discharge Elimination System, requires a stormwater permit for discharges from construction sites of 1 to 5 acres. A general permit including a Stormwater Pollution Prevention Plan and erosion and sediment control plan with site-specific BMPs may be needed since the area to be disturbed is conservatively estimated to be 7 acres.</p>	<p>U.S. Army Corps of Engineers</p> <p>New Mexico Environment Department</p> <p>U.S. Environmental Protection Agency and State of New Mexico</p>
Clean Air Act	Requires federal agencies to determine whether their undertakings are in conformance with the applicable State Implementation Plan and demonstrate that their actions would not cause or contribute to a violation of the National Ambient Air Quality Standards.	U.S. Environmental Protection Agency and New Mexico Environment Department
Endangered Species Act	Requires consultation on impacts of project implementation on federally listed or proposed threatened and endangered species.	U.S. Fish and Wildlife Service and New Mexico Department of Game and Fish
National Historic Preservation Act	Requires federal agencies to consider potential impacts to cultural resources that are listed, nominated to, or eligible for listing on the National Register of Historic Places; designated as a National Historic Landmark; or have traditional cultural properties.	New Mexico State Historic Preservation Office
Safe Drinking Water Act	<p>This Act protects public health by regulating the nation's public drinking water supply.</p> <p>Application for Construction or Modification Of Public Water Supply System may be needed or may only be required to notify the New Mexico Environment Department of the proposed construction.</p>	New Mexico Environment Department
Executive Order 13084, Consultation and Coordination with Indian Tribal Governments	Requires consultation with tribal entities on federal projects.	U.S. Department of Defense

Table 2-1. (continued).

Regulation	Requirement	Agency
Executive Order 13112, Invasive Species	Requires consideration of actions to prevent the introduction and provide for the control of invasive species.	National Invasive Species Council (multiple agencies)
Executive Order 11990, Protection of Wetlands	Requires federal agencies to avoid, where possible, impacts to or loss of wetlands.	U.S. Army Corps of Engineers and State of New Mexico
Executive Order 11988, Floodplain Management	Requires federal agencies to avoid effects on or development in floodplains.	U.S. Army Corps of Engineers and State of New Mexico
Executive Order 12372, Intergovernmental Review of Federal Programs	Requires federal agencies to cooperate with and consider state and local views.	U.S. Air Force
Executive Order 12898, Environmental Justice	Requires federal agencies to consider potential disproportionate effects on minority and low-income populations.	U.S. Air Force
Executive Order 13045, Protection of Children from Environmental Health and Safety Risks	Requires federal agencies to consider potential disproportionate health and safety risks to children.	U.S. Air Force

2.6 COMPARISON OF VIABLE ALTERNATIVES

This EA addresses potential impacts that could result from replacing the deteriorated San Andres pipeline. It examines the potential impacts generated directly from construction activities, and the environmental benefits or disadvantages of alternatives to the proposed project.

Previously drafted environmental documents relevant to the project area and proposed project were used as part of this assessment. Archeological and biological surveys were conducted on 16 August 2006 (a biological survey had also been conducted earlier in the year); information from these surveys was also used in this analysis. Based on the types of activities involved and the issues identified through internal discussion and public input, resources of concern addressed include: transportation, visual resources, land use, socioeconomics, environmental justice, cultural resources, biological resources, noise, soils, water resources, air quality, waste management, and safety.

Table 2-2 summarizes the environmental impacts of the Proposed Action alternative, the No Action alternative, and Alternative C. These are carried through the document for further evaluation.

Table 2-2. Potential Environmental Impacts of the Alternatives Analyzed.

Resource	No Action Alternative	Proposed Action Alternative	Alternative C: Remove and Replace
Transportation	Conditions would continue as they currently are with periodic disruption occurring during repairs.	Impacts would be short term and temporary, occurring only for the duration of the construction period.	Activities under this alternative would generate additional traffic and transportation disruption beyond that generated by the Proposed Action.
Visual Resources	There would be no change in visual resources from current conditions. Short-term and low level impacts would be expected during repairs.	Only short-term and low level impacts would be expected during the construction phase of the project.	Effects would be similar to those for the Proposed Action but the duration of disturbance would be longer.
Land Use	No impacts or changes to current land use in the area would result.	No impacts to surrounding land activities would be anticipated and no changes to land use would result.	Effects to land use would be the same as described for the Proposed Action.
Socioeconomics	No changes would be made to baseline conditions. Minor repairs would continue to be made, but would not impact socioeconomic conditions.	No significant short- or long-term impacts to socioeconomic conditions are expected from implementation of the Proposed Action.	Effects would be similar to those of the Proposed Action. Expenditures would be greater because of the added cost of demolition. No significant short- or long-term impacts are expected.
Environmental Justice	No changes would be made to existing conditions and no impacts to environmental justice are anticipated.	Based on available information, no impacts with regard to environmental justice are anticipated. Implementation would not result in any increased environmental health or safety risks to children.	No impacts with regard to environmental justice are anticipated from this alternative. Implementation of this alternative would not result in any increased environmental health or safety risks to children.

Table 2-2. (continued).

Resource	No Action Alternative	Proposed Action Alternative	Alternative C: Remove and Replace
Cultural Resources	Continued maintenance of the existing pipeline could affect two known sites transected by the pipeline. Any maintenance activities that would be required in the vicinity of these sites would need to be monitored by an archeologist to document any subsurface cultural deposits.	Two known sites are transected by the current pipeline and extend some distance beyond either side of the proposed disturbance corridor of the new pipeline. Avoidance of these sites likely cannot be achieved during construction of the new pipeline. Ground disturbance activity in these areas would need to be monitored by an archeologist to document any subsurface cultural deposits.	Effects to cultural resources would be the same as those described for the Proposed Action.
Biological Resources	An insignificant amount of vegetation would be removed and individual animals may temporarily be displaced during repairs but these effects would be short-term and localized. Sensitive species in the project area are not reasonably expected to be significantly impacted. Invasive weed controls would be implemented as necessary.	Construction activities may remove an insignificant amount of vegetation and individual animals may be temporarily displaced but effects would be short-term and localized. Invasive weed controls would be implemented to minimize the spread of invasive plants in disturbed areas. No significant long-term effects on biological resources are anticipated.	Effects to biological resources would be less than the Proposed Action, although of slightly longer duration as both removal of the old pipeline and installation of the new one would be necessary. All of the work would be done in the existing pipeline alignment where currently little vegetation is present.
Noise	Noise levels would be increased for short periods during repair of the existing pipeline.	Only insignificant impacts are anticipated during the construction phase; no long-term impacts are expected.	Effects would be similar to those described for the Proposed Action although for a longer duration because this alternative involves excavation and removal of the existing pipeline.
Soils	Soils would continue to be disturbed as a result of pipeline breakages. Disturbance to soils would be localized but long-term as breaks in the existing water line became more frequent as the pipe deteriorates.	Implementation would result in up to 7 acres of ground disturbance. Effects would be short-term, localized, and insignificant with erosion control measures implemented.	Effects would be similar to those of the Proposed Action, with up to 7 acres of ground disturbance possible. There would be greater disturbance to the road surface rather than to native soils. Effects would be short-term, localized, and insignificant with erosion control measures implemented.

Table 2-2. (continued).

Resource	No Action Alternative	Proposed Action Alternative	Alternative C: Remove and Replace
Water Resources	Water and soil erosion would continue to occur whenever there was a break in the pipeline, potentially affecting water quality. The potential for impacts would be temporary and localized, lasting only the duration of the repair, and would be mitigated by BMPs.	Temporary ground disturbance during construction could result in short-term effects to water quality. BMPs would prevent sedimentation and there would be no significant impacts on water quality.	The amount of disturbance and effects would be similar to those of the Proposed Action, with greater disturbance to the road surface than to native soils. BMPs would prevent sedimentation and there would be no significant impacts on water quality.
Air Quality	Repairs would continue to be made as needed resulting in short-term, temporary air quality impacts related to ground disturbance. These impacts would be similar to those of the Proposed Action although on a much smaller scale due to the size of a repair versus a replacement.	Dust and exhaust emissions during construction may result in short-term adverse effects on air quality but these are not expected to cause an increase in local air pollutant concentrations beyond state and federal standards. Only insignificant short-term impacts are expected from the construction phase of the proposed project. No long-term impacts to air resources are anticipated.	Effects would be similar to those described for the Proposed Action but slightly greater because of the potential for emissions from crushing and hauling debris away from the site related to removal of the existing pipe. Emissions would be localized, temporary, and short term and would not result in long-term impacts on air quality.
Waste Management	Waste generated could include the broken portion of the existing pipeline that is removed as well as road surface materials that are damaged during excavation. All wastes would be properly disposed of resulting in no impact.	No hazardous waste would be generated and solid waste facilities would not be impacted. No short- or long-term impacts are expected.	Waste generated from removal of the existing pipeline would include the existing pipe and any road surface materials damaged during excavation resulting in a short-term increase in solid waste materials. All wastes would be properly disposed of resulting in no impact.
Safety	Repairs would continue to be made to the existing pipeline and would present the same construction safety hazards as the Proposed Action but for a shorter duration.	Construction would present common construction safety hazards. The Traffic/Safety Plan developed by the construction contractor would define any special procedures to address safety and access during the construction phase. Impacts would be short-term and temporary.	Demolition and installation of the new pipeline would present the same construction safety hazards as the Proposed Action. Impacts would be short-term and temporary

The decision makers are not bound to choose a “best” environmental alternative. Any alternative that meets the need within available resources and constraints may be selected as long as the NEPA process is followed, the alternatives are studied and considered, and the appropriate authority makes an informed decision. The potential environmental consequences summarized in Table 2-2 are based on the detailed analyses presented in Chapter 4. The results of this analysis conclude that there would be no significant impacts to the environment as a result of implementation of the alternatives.

3.0 AFFECTED ENVIRONMENT

This section describes the existing environmental and socioeconomic conditions of the potential area of impact for the San Andres water line project. This section provides information that should serve as a baseline from which to identify and evaluate any environmental and socioeconomic changes likely to result from the implementation of the Proposed Action or alternatives. In compliance with NEPA, CEQ guidelines and 32 CFR 989 et seq., the description of the affected environment focuses on those resources and conditions potentially subject to any impacts. These include: soils, water resources, air quality, biological and cultural resources, land use, aesthetics and noise, solid waste, socioeconomics, and environmental justice.

3.1 GENERAL SETTING

Holloman AFB is located in Otero County, in southeastern New Mexico, approximately 5 miles west of the city of Alamogordo, New Mexico. The 52,055 acres of the main base are located on the open floor of the Tularosa Basin near 4,000 to 4,100 feet above sea level. About 12% of this land is developed. Diverse, broad expanses of lowland desert environments dominate the area, including dunelands and playas and ephemeral drainages. The Sacramento Mountains rise to the east and 33 miles to the west are the San Andres Mountains. The region is characterized as semi-arid and is in the northern portion of the Chihuahuan Desert. Summers have warm to hot days and cool nights and winters are mild. The primary hydrologic processes in this desert ecosystem are summer monsoons and large storm events that fall in the Sacramento Mountains. Average annual rainfall at Holloman AFB is 8.6 inches, most of which falls during the summer monsoons from July to September. Average annual precipitation at Alamogordo for the period 1914 to 2005 is 11.39 inches, which includes 4 inches of snowfall. From 1999 to 2003 the area experienced below average precipitation; 2004, 2005, and 2006 (to date) have experienced slightly above average rainfall (12.88 inches in 2004, 12.43 inches in 2005; and about 18" in 2006).

Southeast of the contiguous portion of the main base lies the BWWSA comprised of three well fields (Boles, Douglas, and San Andres), which comprise some 7,411 acres at the edge of the basin floor, along the western piedmont of the Sacramento Mountains. Elevations range from 4,087 feet in the northern Boles Wells Field to 4,671 feet in the alluvial fan.

Boles Wells Field is nearly level and is covered with spreading sand sheets and scattered playas. The primary purpose of the BWWSA is to provide continuous sources of potable water for the base. Lands to the east of the BWWSA are under jurisdiction of BLM on the north and the U.S. Forest Service – Lincoln National Forest on the East. The southern tip of the BWWSA area borders McGregor Range, located on land controlled by the U.S. Army's Fort Bliss. To the west of the well fields is a mosaic of BLM and private lands as well as land held by the White Sands National Monument. The Old El Paso Highway provides north-south public access through the southern part of the Boles Wells area.

3.2 TRANSPORTATION

3.2.1 Definition of Resource

Existing roads and highways within the area provide links between the base, Alamogordo and the surrounding region, including the project area. Transportation issues for the base are addressed in the General Plan for Holloman AFB.

3.2.2 Existing Conditions

Holloman AFB is located southwest of Alamogordo on U.S. Highway 70 (US 70). Alamogordo is the major population center in the region and US 70 provides regional access to Las Cruces, New Mexico, 50 miles to the southwest. Just south of Alamogordo, US 70 merges with U.S. Highway 54 (US 54), which provides access to El Paso, Texas. U.S. Highway 82 (US 82) intersects US 54/US 70, just north of Alamogordo, and travels east through Artesia, New Mexico. The major north-south roadway through Alamogordo is White Sands Boulevard (US 54/US 70).

Taylor Ranch Road provides access to the project area from US 54, where it originates. Taylor Ranch Road extends east approximately 1.93 miles from US 54 before turning and running in a north south direction. Taylor Ranch Road turns into the Old El Paso Highway toward the northern portion of the project area. The San Andres water line follows portions of Taylor Ranch Road and the Old El Paso Highway before turning Northwest onto U.S. Air Force land.

3.3 VISUAL RESOURCES

3.3.1 Definition of Resource

Visual resources are generally defined as the natural and man-made features that give a particular area its aesthetic quality. These features form the overall impression that an observer receives of an area or its landscape character. The significance of a change in visual character is influenced by social considerations, including public value placed on the resource, public awareness of the area, and general community concern for the viewscape associated with an area.

In undeveloped areas, landforms, water surfaces, and vegetation are the primary components that characterize a landscape. Manmade elements may also be visible. These may dominate the landscape or be relatively unnoticeable. Both manmade and natural features form the overall impression that an observer receives of an area or its landscape character. Attributes used to describe the visual resource value of an area include landscape character, perceived aesthetic value, and uniqueness.

3.3.2 Existing Conditions

The San Andres water line project area is located on the lowest footslopes and basin floor at the western base of the Sacramento Mountains. The Boles Wells Field area is largely undeveloped, with the exception of the vaulted well heads, pipelines, roads, and well field management buildings near the center. Typical desert shrubs, grasses, and trees grow in the area. The well field is fenced as are most properties along the pipeline alignment (on Taylor Ranch Road and the Old El Paso Highway). Properties adjacent to the well field are primarily used for low-density residential and family business purposes. US 54 and a Union Pacific railway main line run adjacent to the well field and are visible from the west side of the well field and portions of the pipeline are in or adjacent to Taylor Ranch Road and the Old El Paso Highway.

The BLM has designated the footslope and escarpment of the Sacramento Mountains as an Area of Critical Environmental Concern (ACEC). This ACEC extends along the west slopes of the mountain range south of Alamogordo and east of Boles Wells Field outside the project area and the lands are managed for visual resource values. Views both to and from the mountains are characterized by large panoramas and natural landscapes.

3.4 LAND USE

3.4.1 Definition of Resource

Land use is comprised of natural conditions or human-modified activities occurring at a particular location. Human-modified land-use categories include residential, commercial, industrial, transportation, communications and utilities, agricultural, institutional, recreational, and other developed use areas. Management plans and zoning subdivision regulations determine the type and extent of land use allowable in specific areas and are often intended to protect the land for the benefit of the public health, welfare, and safety.

3.4.2 Existing Conditions

The Holloman AFB General Plan guides overall organization and development on the base to achieve the most effective use of land and facilities to support its mission. Land to the south and northeast of Holloman AFB is owned and administered by BLM and is primarily leased for grazing. White Sands National Monument, used for recreation and preservation of special resource values, is located to the West. White Sands Missile Range surrounds the monument and borders Holloman AFB to the west, and north.

Land within Boles Wells Field is owned and managed by Holloman AFB and is mostly undeveloped. Adjacent lands are federally or privately owned, and are used predominately for low-density residential subdivisions, footslope and escarpment aesthetics preservation, grazing, and further east forest management.

3.5 SOCIOECONOMICS

3.5.1 Definition of Resource

The socioeconomic setting describes the basic attributes and resources associated with the activities of humans, such as population characteristics, economic assets, and activity. The region of influence for this project includes the county in which the proposed project would be located, Otero County, New Mexico, and the City of Alamogordo, which is 5 miles east of Holloman AFB, and 5 miles North of the proposed pipeline project.

3.5.2 Existing Conditions

The population of Otero County was estimated at 63,538 in 2005, a 2 percent increase from the 2000 population of 62,298. The county's population increased 20 percent between 1990

and 2000 (Census 2006). The population of Alamogordo was estimated at 35,551 in 2003, representing a 0.1 percent decrease in population between April 1, 2000 and July 1, 2003. The 2000 population was 35,582 and had increased by 27 percent since 1990 (Census 2006).

The majority of the active-duty military personnel as well as base-related civilian personnel reside in Alamogordo and other Otero County communities. In 2004, it was estimated that approximately 13,750 Holloman AFB employees and family members lived in Alamogordo or surrounding vicinity (e.g., U.S. Air Force personnel and their families, German Air Force personnel and their families, etc.).

The 1999 per capita incomes for Otero County and the City of Alamogordo were \$14,345 and \$14,662, respectively. At that time, the median household income for Alamogordo was \$30,928. In 2003, the median household income for Otero County was \$31,350 (Census 2006).

There were 27,278 jobs in Otero County in 2000, a decrease of 570 jobs from the 1995 job total. In 2000, more jobs were found in the private sector than in government or government enterprises. The largest sector was services, with 6,223 jobs (22.8%), followed by state and local government with 4,287 jobs (15.7%) and retail trade with 4,286 jobs (15.7%). Five-year labor force estimates are displayed in Table 3-1; unemployment statistics for the area have risen slightly between 1999 and 2003.

Table 3-1. Five-year labor force estimates for Otero County.*

Year	Workforce	Employed	Unemployed	Unemployment Rate
2003	21,656	20,239	1,417	6.5%
2002	19,981	18,821	1,160	5.8%
2001	19,821	18,618	1,203	6.1%
2000	20,630	19,696	934	4.5%
1999	19,892	18,909	983	4.9%

*All data for the month of April

The largest single employer in Otero County is the federal government. In February 2004, Holloman AFB, the area's largest employer, employed approximately 3,900 military and 2,000 civilian personnel (Otero County Economic Development Council, Inc. [OCEDC] 2006). The total annual economic impact generated by Holloman AFB is estimated at \$485 million (HAFB 2004a), including payroll, purchase of contracts for services and supplies,

and annual sales in the region. Major construction contracts in fiscal year 2003 totaled \$45 million.

3.6 ENVIRONMENTAL JUSTICE

3.6.1 Definition of Resource

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, mandates Federal agencies to address disproportionately high and adverse human health and/or environmental effects of its programs, policies, and activities on minority and low-income populations. The CEQ provides suggestions and guidance for addressing environmental justice issues under NEPA (CEQ 1997a). Accompanying EO 12898 was a Presidential Transmittal Memorandum that referenced existing federal statutes and regulations, including NEPA, to be used in conjunction with the EO. Air Force guidance for implementation of the EO is provided in the Interim Guide Environmental Justice Analysis with the EIAP, dated November 1997. Communities sensitive to unjustly high health and environmental impacts are primarily areas in which over 50 percent of the population are minorities and low-income populations.

Minority populations include all persons identified by the U.S. Census Bureau to be of Hispanic origin and all persons not of Hispanic origin other than White (i.e., non-Hispanic persons who are Black, American Indian, Eskimo or Aleut, Asian or Pacific Islander, or other race). Low-income populations include persons living below the poverty level as reported in the 2000 Census of Population and Housing. The percentage of low-income persons is calculated as a percentage of all persons for whom the U.S. Census Bureau determines income status, and is generally a slightly lower number than the total population.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, requires each federal agency to identify and assess environmental health risks and safety risks that may disproportionately affect children. Agencies must ensure that their policies, programs, and activities address disproportionate environmental, health, or safety risks to children.

3.6.2 Existing Conditions

Of the total population of Otero County in 2004, 55.1% were reported as White. Persons of Hispanic or Latino origin, representing the largest minority group, comprised 33.1% of the population; the next largest minority groups were American Indians (6.2%), Black (4.2%), and Asian (1.4%). In 2000, the population of the City of Alamogordo was 32.0% Hispanic or Latino, 5.6% Black, 1.5% Asian, and 1.1% American Indian or Alaska Natives (Census 2006).

In 1999, 16.5% of the population of Alamogordo was below the poverty level. In 2003, 16.5% of the population of Otero County was below the poverty level. Otero County's population in 2000 included 18,165 persons under the age of 18 (29.5%). At that time, 28.7% percent of Alamogordo's population was below 18 (Census 2006).

3.7 CULTURAL RESOURCES

3.7.1 Definition of Resource

Cultural resources are any prehistoric or historic district, site, or building, structure, or object considered important to a culture, subculture, or community for scientific, traditional, religious or other purposes. They include archeological resources (both prehistoric and historic), historic architectural resources, and traditional cultural properties. Only significant cultural resources (as defined in 36 CFR 60.4) are considered for potential adverse impacts from an action. Significant archeological and architectural resources are either eligible for listing or are listed on the National Register of Historic Places (NRHP). Significant traditional cultural properties are typically identified to federal agencies by Native American tribes or other groups, and may be eligible for the NRHP. Holloman AFB does consult with the State Historic Preservation Officer and Tribal Historic Preservation Officers as appropriate for each project proposed by the base.

On 21 November 1999, the DOD promulgated its American Indian and Alaska Native Policy, which emphasizes the importance of respecting and consulting with tribal governments on a government-to-government basis. The Policy requires an assessment, through consultation, of the effect of proposed DOD actions that may have the potential to significantly affect protected tribal resources, tribal rights, and Indian lands before decisions

are made by the services. Holloman AFB conducts Native American consultation regarding each project to identify the tribe's concerns.

3.7.2 Existing Conditions

The cultural history of Holloman AFB and the surrounding region is documented in Holloman AFB's Integrated Cultural Resource Management Plan (HAFB 2006) and the cultural resource report prepared for this EA (Damp 2006). Archeological evidence reveals that humans have lived in the Tularosa Basin for more than 10,000 years. Thus both prehistoric and historic properties are expected in the region.

A search of the New Mexico Cultural Resource Information System (NMCRIS) database revealed 32 previously recorded archeological sites within 1 mile of the project area. Six of these sites were either transected by the proposed water line (LA 100168, LA100170), or within approximately 500 feet (150 meters) of the proposed water line (LA 104261, LA 104268, LA 104269, LA 113707). The two sites transected by the proposed water line retain their integrity and are eligible for inclusion on the NRHP.

On 16 August 2006, archeologists from North Wind conducted a Class III inventory of the area of potential effect (APE). The 7.5-m pedestrian survey encountered the two previously recorded sites that are transected by the proposed water line and also recorded 6 isolated occurrences (IOs).

3.8 BIOLOGICAL RESOURCES

3.8.1 Definition of Resource

Biological resources include native or naturalized plants and animals, and the habitats in which they occur. This section describes plant and animal species or vegetation types that typify the biological resources that occur in the San Andres water line area and focuses on species protected under federal or state law. For purposes of this assessment, sensitive species are plants and animals listed as threatened, endangered, or of concern to the U.S. Fish and Wildlife Service (USFWS), the New Mexico Department of Game and Fish (NMDGF), and the New Mexico Rare Plant Technical Council, which designates state-protected species.

This section addresses four categories of protection status for species with the potential to occur in the proposed project area. These include: Federal Listed Threatened and

Endangered Species; Federal Species of Concern or Candidate Species; State Listed Threatened and Endangered Species; and State Rare and Sensitive Species.

Federal Listed Threatened and Endangered Species (FT and FE): The ESA provides protection to fish, wildlife, or plant species listed under this category. Endangered species are those species that are in danger of extinction throughout all or a significant portion of their range. Threatened species are those likely to become endangered species in the foreseeable future.

Federal Species of Concern or Candidate Species (FSC): FSC includes species that the USFWS is considering for listing as federally threatened or endangered but for which a proposed rule has not yet been developed. In this sense, candidates do not benefit from legal protection under the ESA. In some instances, candidate species may be emergency listed if the USFWS determines that the species population is at risk due to a potential or imminent impact.

State Listed Threatened and Endangered Species (ST and SE): A list of state threatened and endangered species is maintained by the state of New Mexico and these species are protected from harassment, taking, and possession. Similar definitions of threatened and endangered in the federal category apply to the state category. State and federal lists often include the same species.

State Rare and Sensitive Species (SS): New Mexico rare plant species include species with narrow ranges, or occurrences that are more widespread but are numerically rare.

3.8.2 Existing Conditions

3.8.2.1 Vegetation

A general survey for sensitive plant species, invasive weeds, and other biological features was conducted along the proposed pipeline route in August 2006 in support of this EA. Observations from this survey, as well as information compiled by Holloman AFB's Natural Resources Manager from a survey along the same route in June 2006, and in support of the Boles Wells Field Perimeter Security Improvement Project in June 2004, are included below.

Characteristic vegetation of Nickel-Tencee soils is black grama (*Bouteloua eriopoda*), bush muhly (*Muhlenbergia porteri*), creosotebush (*Larrea tridentata*), tobosa (*Pleuraphis mutica*),

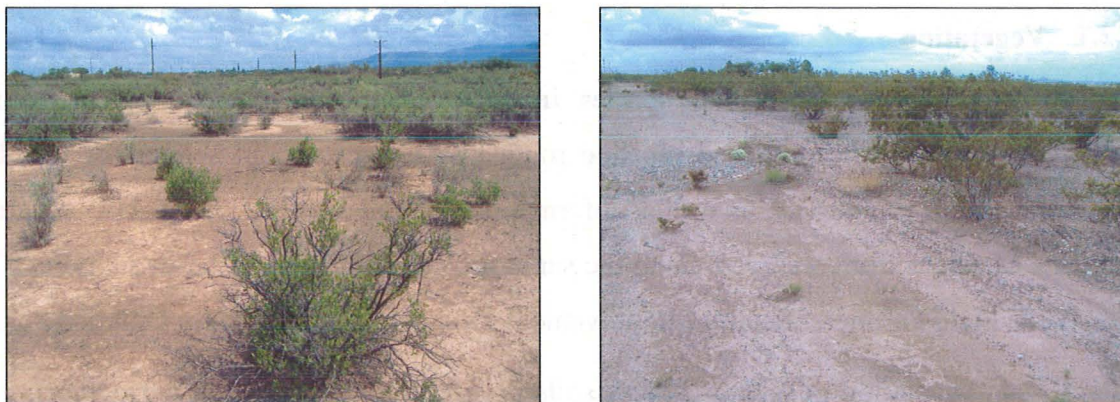
broom snakeweed (*Gutierrezia sarothrae*), alkali sacaton (*Sporobolus airoides*), rough ephedra (*Ephedra aspera*), buckwheat (*Eriogonum* spp.), and various other shrubs and grasses. These soils are fairly unproductive, averaging about 350 lbs/acre in a normal precipitation year, and habitat for vegetation and for wildlife is generally poor to very poor.

Largo-Ogral soils are typically dominated by tobosa, alkali sacaton, burrograss (*Scleropogon* spp.), black grama, twoflower trichloris (*Chloris crinita*), bush muhly, vine mesquite (*Panicum obtusum*), creosotebush, American tarbush (*Flourensia cernua*), and various other shrubs and grasses. Production in a normal precipitation year averages 600 to 650 lbs/acre, and habitat for vegetation and for wildlife is generally poor to very poor.

Tome soils are dominated by black grama, bush muhly, burrograss, alkali sacaton, tobosa, winterfat (*Krascheninnikovia lanata*), and various other shrubs and grasses. Production in a normal precipitation year averages about 300 lbs/acre, and habitat for vegetation and for wildlife is generally poor to very poor.

Most of the project area is not vegetated due to historic and on-going disturbance related to the use of the road and occasional repairs to the pipe. The vegetation surrounding the proposed pipeline route is dominated by a near monoculture of typical Chihuahuan Scrub. This includes four-winged saltbush (*Atriplex canescens*), tarbush (*Flourensia cernua*), lotebush (*Ziziphus obtusifolia*), western honey mesquite (*Prosopis glandulosa* var. *torreyana*), prickly pear (*Opuntia* spp.), and less abundant, scattered grass and forb species (Figure 3-1).

Figure 3-1. Typical Vegetation in the Project Area.



No sensitive plant species were identified along the proposed pipeline route. Sensitive plants that may be present in the region but were not observed in the project area include:

- Sacramento prickly poppy (*Argemone pleiacantha pinnatisecta*) - SE, FE
- Kuenzler's hedgehog cactus (*Echinocereus fendleri kuenzleri*) -TE, SE
- Villard pincushion cactus (*Escobaria villardii*) - SE, FSC
- Night-blooming cereus (*Peniocereus greggii*) - SE, FSC
- Paperspine fishhook cactus (*Sclerocactus papyracanthus*) - SS, FSC
- Alamo beardtongue (*Penstemon alamosensis*) - SS, FSC
- Gypsophyllous lichen (*Acarospora clauzadeana*) - a critically imperiled lichen because of extreme rarity known to occur on Holloman AFB (HAFB 1999).

No Federal or State-listed noxious weeds were identified in the project area, although African rue (*Peganum harmala*) and Russian knapweed (*Acroptilon repens*) are both known to occur in the general vicinity. Both plants are at risk of spreading with disturbance. Salt Cedar (*Tamarix* spp.) is also common in the area although not directly along the proposed pipeline route. Holloman AFB, Otero County, and numerous other agencies are partners in an organization established to prevent or minimize the spread of noxious species. Holloman AFB has initiated noxious weed control efforts on Air Force property and will continue as funds are made available.

3.8.2.2 Wildlife

Although intensive wildlife surveys were not conducted in preparation of this EA, wildlife species composition within the area is generally known from previous surveys in the vicinity of the project. Several animal species were observed along the proposed pipeline route during the biological survey in August 2006, including: Gambel's quail (*Callipepla gambelii*), whiptail lizards (*Cnemidophorus* spp.), Western diamondback rattlesnake (*Crotalus atrox*), turkey vulture (*Cathartes aura*), sparrows, wrens, flycatchers, and other small birds.

Several other animals are known to occur in the area including desert cottontail (*Sylvilagus audubonii*), black-tailed jackrabbit (*Lepus californicus*), porcupine (*Erethizon dorsatum*), mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), collared peccary (*Pecari tajacu*), several rodent species, and the occasional mountain lion (*Felis concolor*) and ringtail

(*Bassariscus astutus*). Numerous small colonies of bats forage for insects at the playas and other hydrological features in the Boles Wells Field, although such habitat is not present along the proposed pipeline route.

At least 230 bird species have been confirmed at Holloman AFB, some of which are neotropical migratory birds as well as designated sensitive species. These species are protected by legislation and it is important to maintain habitat for these species so that migratory patterns are not disrupted. All migratory birds are protected under the 1918 Migratory Bird Treaty Act (16 USC 703), which prohibits the taking of any migratory birds, their parts, nests, or eggs. In addition, the Neotropical Migratory Bird Conservation Act (16 USC Chapter 80) was passed in 2000. The purposes of the Act are (1) to perpetuate healthy populations of neotropical migratory birds, (2) to assist in the conservation of neotropical migratory birds by supporting conservation initiatives in the United States, Latin America, and the Caribbean, and (3) to provide financial resources and to foster international cooperation for those initiatives.

Neotropical migratory birds breed in North America but migrate to Mexico and Central and South America for the winter. Neotropical migratory birds are of particular interest to wildlife managers for several reasons. First, neotropical migratory birds play a major role in the health and functioning of ecosystems, as consumers of insects, dispersers of seeds, and pollinators of flowers (Robinson 1997). Second, neotropical migratory bird populations have experienced declines throughout the last several decades. Many reasons are responsible for these declines including habitat fragmentation and loss, land-use changes in both breeding and wintering habitats (Nicholoff 2003), a reduction in migratory stop-over habitat (Robinson 1997), pollution, and increases in predators and nest parasitism. Lastly, neotropical migratory birds can be used by managers as a tool to monitor effects of land-use practices and landscape changes, as well as the health of a particular habitat or system (Hutto and Young 2002).

Holloman AFB has proactively enhanced the existing desert playa ecosystem to support breeding and migrating bird habitat (HAFB 1999). Most of these species occupy areas with a greater proportion of riparian or wetland habitat than that found within the project area.

No evidence of federally-listed or state-listed species or their habitat was noted during the field survey. However, two sensitive wildlife species likely occur within the project area; the Texas horned lizard (*Phrynosoma cornutum*) and the loggerhead shrike (*Lanius ludovicianus*).

The Texas horned lizard is typically found in arid and semiarid habitat with sparse vegetation in loose sand or gravel and they are known to occur in the BWWSA in abundance, as are several other herpetological species including ground snake (*Sonora semiannulata*), side-blotched lizard (*Uta stansburiana*), desert spiny lizard (*Sceloporus magister*), and short-horned lizard (*Phrynosoma douglasii*).

The loggerhead shrike is considered a resident at Holloman AFB. It occurs throughout New Mexico at lower and middle elevations. This species prefers open country with short vegetation and scattered trees and shrubs, occurring in deserts and prairies in the West and pastures and fields in the East. Previous surveys indicate that loggerhead shrikes occur within the project area.

3.9 NOISE

3.9.1 Definition of Resource

Noise is considered to be unwanted sound that interferes with normal activities or otherwise diminishes the quality of the environment. It may be intermittent or continuous, steady or impulsive, stationary or transient. Different land uses and human activities have different sensitivity to noise. There is a wide diversity in responses to noise that not only vary according to the type of noise and the characteristics of the sound source, but also according to the sensitivity and expectations of the receptor, time of day, and distance between the noise source and receptor (e.g., person or animal).

3.9.2 Existing Conditions

Noise levels in the proposed project vicinity are primarily residential, agricultural, or construction originated, and are typically low, except for the western border of the well field where US 54 and the Southern Pacific railway parallel one another north-south immediately west of the fence line. There are a small number of residences along Taylor Ranch Road and the Old El Paso Highway that represent noise sensitive locations along the pipe line.

3.10 SOILS

3.10.1 Definition of Resource

This section discusses soils within the region of influence because surface disturbance would result from implementation of the alternatives. Soils are comprised of unconsolidated weathered minerals and organic material at the ground surface in which plants grow. The area of influence for soils includes the approximately 6-foot wide trench plus the 10-foot wide area of disturbance on each side of the 2.3-mile long pipeline route.

3.10.2 Existing Conditions

Soils along the proposed 2.3-mile pipeline route were formed on floodplains and lower parts of the pediment slope by drainages from the Sacramento Mountains immediately east of the project area. The southernmost 0.4 miles (from the south tank to just south of the junction of Taylor Ranch Road and the Old El Paso Highway) are composed of the Nickel-Tencee association. The Nickel soils are mainly on alluvial fans and the lower parts of the sides of pediments adjacent to the drainageways on slopes ranging from 1 to 30%. They are deep, gravelly to very gravelly throughout, strongly calcareous and moderately alkaline. Permeability is moderately slow and available water capacity is low. Tencee soils are shallow and are mainly on the upper parts of sides of pediments and alluvial fans on slopes of 0 to 10%. They are very gravelly throughout and have a zone of carbonate-cemented material (caliche) at a depth of less than 20 inches. These soils are also strongly calcareous throughout and moderately alkaline. Permeability is moderate and available water capacity is very low. Nickel-Tencee soils are primarily used for grazing and some residential purposes. The slope, gravelly nature, and shallow depth typically limit urbanization, farming, and recreation. The potential for wildlife habitat is low to moderate (NRCS 1988).

Soils along the middle 1.15 miles of the proposed pipeline location (i.e., north along the Old El Paso Highway and following the northwest turn in the pipe for approximately 0.5 mile) are composed primarily of the Largo-Ogral complex. These soils are deep and well-drained and typically located on the relatively level (0 to 5% slopes), partially dissected lower toe slopes of pediments. Largo soils are slightly calcareous throughout, moderately alkaline, permeability is moderately slow, and available water capacity is high. Ogral soils typically have a thin desert pavement (<2 inches thick) on 30 to 60% of their surface, permeability is

moderately rapid, and available water capacity is low. Largo-Ogral soils are primarily used for grazing and limited urban use and farming. The potential for wildlife habitat is moderate (NRCS 1988).

Soils along the northern 0.75 mile of the proposed pipeline (north of the Largo-Ogral soils to the north tank on Boles Wells Field Road) are composed primarily of Tome silt loams. This deep, well drained, nearly level to gently sloping (0 to 5% slopes) soil is on flood plains and lower parts of pediment side slopes of major streams and basins. Parts of this soil unit are flooded each year as all areas receive runoff water from surrounding areas. This soil is strongly calcareous throughout and moderately alkaline. Permeability is moderately slow and available water capacity is high. Tome silt loams are primarily used for grazing, farming, and urban uses. The potential for wildlife habitat is moderate (NRCS 1988).

3.11 WATER RESOURCES

3.11.1 Definition of Resource

Water resources consist of both surface water and that beneath the ground surface. The quality and quantity of downstream water bodies that could be affected are of concern. Of additional concern are hazards associated with 100-year floodplains delineated in accordance with EO 11988, *Floodplain Management*. No designated 100-year floodplains are located in the project area. Any potential modifications to wetlands are addressed in accordance with EO 11990, *Protection of Wetlands*, which regulates development activities in or near streams. Wetlands are defined as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR Section 328.3). Waters of the U.S. are also defined in that section as “All other waters such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds...”.

3.11.2 Existing Conditions

The project area is located within the Tularosa Basin. Precipitation on the surrounding mountain slopes runs via intermittent streams toward the center of the basin, or moves as groundwater through alluvial deposits and permeable formations below the stream channels

(NMISC 2002). The main perennial streams of the basin are the upper reaches of Three Rivers, Tularosa Creek and El Rito de La Luz (none of which are close to the proposed project area). The basin is generally covered with deposits of gypsum, alluvial and aeolian sand, gravel, clay, and alkali flats of varying thickness.

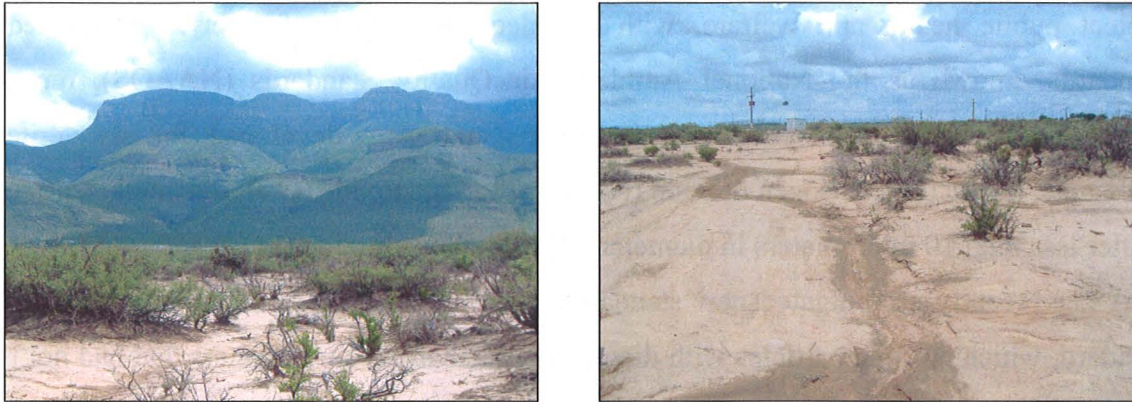
No perennial streams exist within Holloman AFB or the surrounding area. However, several arroyos cross the base and flow intermittently, primarily with stormwater runoff. The main arroyos include Lost River, Dillard Draw, Malone Draw, and several smaller tributaries that generally drain in the southwest direction. Most precipitation events in the local ecosystem occur as summer monsoons and large storm events falling on the slopes of the Sacramento Mountains. Precipitation is absorbed quickly by the gravels and silty sandy soils at the base of the alluvial fans, often before water reaches their outlets. During these precipitation events, runoff that is not immediately absorbed flows down gradient via numerous shallow cuts and arroyos, which create a random network of drainages that abruptly end or gradually disappear as water seeps into the soil. Flooding occurs at lower elevations and the margins of the basin floor during heavy precipitation events.

The Boles Wells Field is characterized by nearly level topography that is dissected by natural ephemeral streams, channelized drainages, and excavated basins. The Boles Wells Field area contains approximately 5.47 acres of jurisdictional waters of the U.S. including 0.72 acre of wetland and 4.75 acres of non-wetland waters (HAFB 1999). This includes one non-vegetated ephemeral basin, one vegetated ephemeral basin, and one permanently flooded pond. Surface water within the proposed project area is limited to minor intermittent drainages (Figure 3-2). Seasonal precipitation events can create ponds in the saturated soils of swales and playas in the lowland areas. The area was previously used for grazing and farming and as a result much of the soil has been eroded and sparse vegetative cover and monsoonal precipitation events subject the area to extensive sheet erosion.

Small construction activities that disturb areas of 1 acre or larger must comply with the U. S. Environmental Protection Agency (EPA) Phase II Stormwater General Permit for Small Construction. Compliance with the permit is intended to improve or maintain water quality by minimizing pollutants in stormwater runoff that is discharged into the drainage system. It requires issuance of a Notice of Intent, development and implementation of a site-specific

SWPPP and an erosion and sediment control plan, and maintenance of control measures. The SWPPP and erosion and sediment control plan includes temporary and permanent stabilization of disturbed areas and the installation and maintenance of BMPs. The Stormwater General Permit may be waived for activities occurring during periods of low rainfall (i.e., September through June) at Holloman AFB (EPA 2001).

Figure 3-2. Typical Drainageways in the Project Area.



Groundwater recharge occurs largely from rainfall and snowmelt in the Sacramento Mountains, where intermittent stream flow infiltrates into the loosely consolidated, coarse, alluvial fan material. The majority of the water supply of most of the Tularosa Basin, including Holloman AFB, is provided by groundwater sources, although some surface water impoundments, such as Bonito Lake, supplement supply. Groundwater beneath the project area is recharged by surface and subterranean flow from the mountains to the east.

The primary aquifer consists of alluvial deposits that are very thick and have a high salinity in the center of the Tularosa Basin; the best sources for fresh potable groundwater are located around the edges of the basin (NMWQCC 2002). The well fields receive groundwater recharge from six canyons: Muleshoe Canyon, Andres Canyon, Deadman Canyon, Dog Canyon, Lead Canyon, and Escondido Canyon. The depths of the wells are considered sufficient to prevent contamination by sewage effluent from adjacent residential communities (HAFB 1999).

3.12 AIR QUALITY

3.12.1 Definition of Resource

Air quality in a given location is determined by the concentration of various pollutants in the atmosphere. The significance of a pollutant concentration in a region or geographical area is determined by comparing it to federal and/or state ambient air quality standards.

Under the authority of the CAA, the EPA has established nationwide air quality standards to protect public health and welfare, with an adequate margin of safety. These federal standards, known as the National Ambient Air Quality Standards (NAAQS), represent maximum allowable atmospheric concentrations and were developed for six “criteria” pollutants: ozone (O₃); nitrogen dioxide (NO₂); carbon monoxide (CO); respirable particulate matter less than 10 micrometers in diameter (PM₁₀); sulfur dioxide (SO₂); and lead (Pb). The EPA has recently promulgated new standards: a new 8-hour O₃ standard and a new PM_{2.5} standard, which are fine particles with diameters less than 2.5 micrometers that had not been previously regulated.

The NAAQS are defined in terms of concentration (e.g., parts per million [ppm] or micrograms per cubic meter [$\mu\text{g}/\text{m}^3$]) determined over various periods of time called averaging periods. Short-term standards (1-hour, 8-hour, or 24-hour periods) were established for pollutants with acute health effects and may not be exceeded more than once per year. Long-term standards (annual periods) were established for pollutants with chronic health effects and may never be exceeded.

The EPA designates areas of the U.S. as having air quality equal to or better than the NAAQS (attainment) or worse than the NAAQS (nonattainment). Areas are designated as unclassifiable for a pollutant when there is insufficient ambient air quality data for the EPA to form a basis of attainment status. The CAA Amendments of 1990 established new federal nonattainment classifications, new emission control requirements, and new compliance dates for nonattainment areas. Specific compliance dates and requirements are based on the severity of the nonattainment classification. Otero County, and therefore the project area, is in attainment for all criteria pollutants.

Under the CAA, state and local agencies may establish specific air quality standards and regulations, provided these are at least as stringent as the federal requirements. For selected criteria pollutants, the state of New Mexico has established its state ambient air quality standards (NMAAQS), which are somewhat more stringent than the federal standards. A summary of the federal and New Mexico ambient air quality standards that apply to the proposed project area is presented in Table 3-2.

Table 3-2. Air Pollutant Concentration Standards.

Air Pollutant	Averaging Time	Federal NAAQS (maximum levels)		NMAAQS (maximum levels)	
		Primary	Secondary	Primary	Secondary
Total Suspended Particulates	24-hour avg	--	--	150 $\mu\text{g}/\text{m}^3$	--
	7-day avg	--	--	110 $\mu\text{g}/\text{m}^3$	--
	30-day avg	--	--	90 $\mu\text{g}/\text{m}^3$	--
	AAM*	--	--	60 $\mu\text{g}/\text{m}^3$	--
Sulfur Dioxide (SO ₂)	3-hr avg	--	0.5 ppm	--	0.5 ppm
	24-hour avg	0.14 ppm	--	0.10 ppm	--
	AAM	0.03 ppm	--	0.02 ppm	--
Carbon Monoxide (CO)	1-hr avg	35 ppm	--	13.1 ppm	--
	8-hr avg	9 ppm	--	8.7 ppm	--
Nitrogen Dioxide (NO ₂)	24-hr avg	--	--	0.10 ppm	--
	AAM	0.053 ppm	0.053 ppm	0.05 ppm	0.053 ppm
Ozone (O ₃)	1-hr avg	0.12 ppm	0.12 ppm	0.12 ppm	0.12 ppm
	8-hr avg	0.08 ppm	0.08 ppm	--	--
Particulate Matter (PM ₁₀)	24-hr avg	150 $\mu\text{g}/\text{m}^3$	150 $\mu\text{g}/\text{m}^3$	--	150 $\mu\text{g}/\text{m}^3$
	AAM	50 $\mu\text{g}/\text{m}^3$	50 $\mu\text{g}/\text{m}^3$	--	50 $\mu\text{g}/\text{m}^3$
Particulate Matter (PM _{2.5})	24-hr avg	65 $\mu\text{g}/\text{m}^3$	65 $\mu\text{g}/\text{m}^3$	--	--
	AAM	15 $\mu\text{g}/\text{m}^3$	15 $\mu\text{g}/\text{m}^3$	--	--
Lead (Pb)	Quarterly average	1.5 $\mu\text{g}/\text{m}^3$	1.5 $\mu\text{g}/\text{m}^3$	1.5 $\mu\text{g}/\text{m}^3$	1.5 $\mu\text{g}/\text{m}^3$

*AAM = Annual Arithmetic Mean

CAA Section 176(c), General Conformity, established certain statutory requirements for Federal agencies with proposed federal activities to demonstrate conformity of the proposed activities with each state's implementation plan (SIP) for attainment of the NAAQS. In 1993, the EPA issued the final rules for determining air quality conformity. General conformity applies only to nonattainment and maintenance areas and therefore is not applicable to the project area.

3.12.2 Existing Conditions

As stated in the discussion above, Otero County is currently designated as an attainment area for all federal criteria pollutants. The project area is not in a Class I area (Class I areas are major parks and wilderness areas over 6,000 acres where pristine air quality and scenic vistas are integral features); the nearest one is approximately 43 miles northeast of Holloman AFB in the White Mountain Wilderness Area.

The project area is located in a region characterized by a semiarid continental climate. The prevailing wind direction is from the west, with southerly winds being more common during warmer months. Although winds in the region can be strong and gusty in the vicinity of a thunderstorm, typically they are relatively low, averaging 5 miles per hour. Dust is frequently entrained into the atmosphere in this region of the country because of gusty winds and semiarid climate. The Texas Panhandle-southern New Mexico area is considered the worst area in the U.S. for windblown dust, and occasionally the dust is of sufficient quantity to restrict visibility. Most of the seasonal dust storms occur in March and April, when wind speeds are generally higher.

Baseline emissions in the area are predominantly from vehicular traffic and other human activities. Management crews for the Boles Wells Field typically use pickup trucks and other light duty vehicles for transportation on the job, and only occasionally use larger engine equipment such as farm machinery, earth moving equipment, grading equipment, generators, and other heavy equipment.

3.13 WASTE MANAGEMENT

3.13.1 Definition of Resource

Hazardous materials are identified and regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Occupational Safety and Health Administration (OSHA), and the Emergency Planning and Community Right-to-Know Act (EPCRA). Hazardous materials are defined to include any substance with special characteristics that could harm people, plants, or animals (AFI 32-7086, *Hazardous Materials Management*). Hazardous waste is defined in the Resource Conservation and Recovery Act (RCRA) as any solid, liquid, contained gaseous or semisolid waste, or any combination of wastes that could or do pose a substantial hazard to human health or the

environment. The hazardous materials pharmacy at Holloman AFB controls hazardous materials used by U.S. Air Force or contract personnel. Hazardous wastes generated on base must be characterized and profiled and properly disposed of in accordance with Holloman AFB's RCRA Part B permit.

Solid waste resources include public agencies and private companies that provide licensed facilities for solid waste disposal. They are generally described in terms of their capacity and lifespan for receiving waste.

In the context of this analysis, the concern with hazardous materials or waste is the potential for an encounter with previously dumped or stored hazardous waste within the project area that would need to be addressed as a result of the proposed project.

3.13.2 Existing Conditions

The Otero-Lincoln County Landfill is the permitted waste facility designed to dispose of residential, commercial, and construction waste for Otero County and the City of Alamogordo. It is located on US 54, approximately 24 miles south of Alamogordo. The landfill first opened in 1994 and has 92 acres permitted for receiving solid waste. Approximately 18 to 20 acres have been filled; the design anticipates a 50-year life span for operation. The landfill receives an average of 250 tons per day, approximately 72,000 tons per year. Tipping fees for construction waste for Holloman AFB range from \$22 to \$37.50 per ton (Hammann 2004, Livingston 2006).

If any hazardous materials or wastes are encountered during construction activities, the appropriate personnel at Holloman AFB would be contacted to ensure proper handling and disposal.

3.14 SAFETY

3.14.1 Definition of Resource

Health and safety risks are inherent to mission activities at Holloman AFB. Safety standards and procedures for day-to-day operations at Holloman AFB are found in Air Force regulations; additional guidance concerning safety issues can be found in the DOD Directive 1000.3, Safety and Occupational Health Policy for the DOD, March 29, 1979.

3.14.2 Existing Conditions

Construction activities could create opportunities for common construction-related accidents involving Holloman AFB or contractor personnel. Potential risks to personnel and the public would be mitigated by following standard operating procedures for these types of activities.

4.0 ENVIRONMENTAL CONSEQUENCES

This chapter presents the results of the impact analyses for the alternatives described in Chapter 2. For each alternative, the environmental effects are analyzed for each resource topic presented in Chapter 3. An environmental consequence or impact is defined as a modification in the existing environment brought about by mission and support activities.

Impacts can be beneficial or adverse, direct or indirect, or cumulative. Beneficial impacts are those that involve a positive change in the condition or appearance of a resource or a change that moves the resource toward a desired condition. Adverse impacts involve a change that moves the resource away from a desired condition or detracts from its appearance or condition. Direct impacts are caused by an action and occur at the same time and place as the action. Indirect impacts are caused by an action and occur later or farther away from the resource but are still reasonably foreseeable. Cumulative impacts are the impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions (cumulative impacts are discussed in Chapter 5).

Impacts can also be permanent or long-lasting (long-term) or temporary and of short duration (short-term). Short-term impacts would occur during and immediately following construction of the proposed project. For this project, short-term impacts are defined as those tied to the construction phase of the project, whereas long-term impacts are those following completion of the construction phase.

Significant impact criteria for each affected resource are based on existing regulatory standards, scientific and environmental knowledge, and/or best professional judgment. Potential impacts for this project were classified at one of three levels: significant, insignificant (or negligible), and no impact. Significant impacts (as defined in CEQ guidelines 40 CFR 1500-1508) are effects that are most substantial, and therefore, should receive the greatest attention in the decision-making process. Insignificant impacts would be those impacts that result in changes to the existing environment that could not be easily detected. No-impact actions would not alter the existing environment. Most of the area of impact is roadway or previously disturbed or developed land.

4.1 TRANSPORTATION

4.1.1 Methodology

Transportation is evaluated for the potential disruption or improvement of current transportation patterns and systems, and increases or decreases from existing levels of traffic.

4.1.1 Potential Impacts

4.1.1.1 Proposed Action Alternative

Impacts from Construction: Construction activity related to installation of the new water line may have a slight effect on traffic levels and vehicle mix on Taylor Ranch Road and the Old El Paso Highway for the duration of the construction period. Construction truck traffic and construction workers commuting to the project area would generate minor increases in vehicle trips per day on Taylor Ranch Road and the Old El Paso Highway.

Temporary lane closures may be necessary during construction activities. Also, trenches would cut across some access roads and driveways. Prior to construction, the construction contractor would develop a Traffic/Safety Plan that defines construction traffic routes, staging areas, and any special procedures to address safety and access during the construction phase. Appropriate signage and detours to maintain access for residents and local users would be provided. Impacts would be short-term and temporary, occurring only for the duration of the construction period. Any given location could experience one or two weeks of disturbance, possibly at different times during the construction process. The construction contract would require that any damaged or removed property (such as fencing, walls or landscaping) be replaced with similar or higher-grade materials upon completion of the construction work.

Impacts from Operation/Use: Operation of the San Andres pipeline would have no effect on day to day traffic or transportation once construction is complete. Any future repairs to the new pipeline would be significantly less than the No Action alternative, which requires frequent repairs. Thus, over the long-term traffic and transportation would be less impacted by the Proposed Action alternative.

4.1.1.2 No Action Alternative

Under the No Action alternative, conditions would continue as they currently are with periodic disruption occurring during repairs. Similar effects to those described for the Proposed Action would occur under this alternative, but on a smaller scale (i.e., at the site of the pipeline replacement) and for a shorter period of time. These disruptions would continue to occur resulting in disturbance to traffic and transportation at irregular intervals.

4.1.1.3 Alternative C – Remove and Replace

Activities for the new pipeline under this alternative would generate additional truck traffic and disruption of transportation beyond that generated by the Proposed Action alternative. Temporary lane closures may be required for a longer duration because of excavation of the existing pipe. When the existing pipeline is removed, onsite crushing of the pipe and loading debris onto haul trucks could result in additional traffic disruption. Replacing the pipe in the same alignment would result in more extensive traffic disruption because more of the construction would occur underneath the road surface rather than in the easement. Furthermore, future repairs to the pipeline would require potential disruption of traffic since larger portions of the pipeline would remain under Taylor Ranch Road. Other effects and mitigations would be the same as described for the Proposed Action.

4.2 VISUAL RESOURCES

4.2.1 Methodology

Federal and state land custodians and local governments are given the power to adopt regulations and procedures to protect visual resource values within their jurisdiction. Local agencies or land developers may enforce standards of high visual value, low tolerance for visible modification, or other designated visual resources classifications. The degree to which an action would modify the existing surroundings is used to assess the level of impact.

4.2.2 Potential Impacts

4.2.2.1 Proposed Action Alternative

Impacts from Construction: The new pipeline would be installed in an area that is visible to the general public in previously disturbed areas in its alignment along Taylor Ranch Road and the Old El Paso Highway. Construction equipment would be visible in this area during

project implementation. The construction would not obstruct views of the Sacramento Mountains nor would it significantly change the overall landscape and views from the mountain range. Local residents would notice the equipment and personnel movement during construction, but this would be temporary. Only short-term and low level impacts would be expected during the construction phase of the project.

Impacts from Operation/Use: After construction, pressure relief valves may be visible from the road; however, these features are currently installed on the existing line and are therefore not expected to alter visual resources. There would be no long-term impacts to visual resources.

4.2.2.2 No Action Alternative

There would be no change in visual resources from current conditions under the No Action alternative. Construction equipment would continue to be visible during repairs of the line, but this would be temporary, for the duration of the construction only. Ground disturbance would continue, possibly delaying revegetation of disturbed areas.

4.2.2.3 Alternative C – Remove and Replace

Effects to visual resources from Alternative C would be similar to those described above for the Proposed Action. Because the existing pipeline would be removed the duration of disturbance would be longer, increasing the amount of time construction equipment would be visible in the corridor. Once construction is complete effects to visual resources would be the same as for the Proposed Action; no long-term impacts to visual resources would result.

4.3 LAND USE

4.3.1 Methodology

Land use impacts can result if an action displaces an existing use or reduces the suitability of an area for its current, designated, or formally planned use. In addition, a proposed activity may be incompatible with local plans and regulations that provide for orderly development to protect the general welfare of the public, or conflict with a federal or state agency's management objectives for an affected area. Land use development would need to comply with federal and state environmental laws and regulations.

4.3.2 Potential Impacts

4.3.2.1 Proposed Action Alternative

Impacts from Construction: All work to replace the existing pipeline would occur within an existing easement along county roads or on Holloman AFB property; no additional easements or land acquisition would be required for installation of the pipeline.

Only short-term insignificant impacts would be expected during the construction phase of the Proposed Action. The contractor would contact appropriate parties (utility locating services) to assure that effects to utility services, underground pipes, etc., are avoided. No impacts to surrounding land use activities would be anticipated and no changes to land use would result.

Impacts from Operation/Use: Once construction is complete, no effects to land use from operation of the pipeline would result. Therefore, no long-term impacts are anticipated.

4.3.2.2 No Action Alternative

No impacts or changes to current land use in the area would result from the No Action alternative. Continued maintenance of the pipeline would not affect existing land use, although pipeline breakages could flood property resulting in temporary disruptions of access and use of flooded land.

4.3.2.3 Alternative C – Remove and Replace

Effects to land use under Alternative C would be the same as those described above for the Proposed Action; no changes to land use would result.

4.4 SOCIOECONOMICS

4.4.1 Methodology

Baseline conditions for population, employment, and earnings were presented for both the City of Alamogordo and Otero County when available. Data presented were compiled primarily from U.S. Census Bureau datasets. Historical data (i.e., 1990 and 2000 Census data) were used as a comparison tool against current figures where applicable. Economic activities related to the action alternatives would be of relatively short duration.

4.4.2 Potential Impacts

4.4.2.1 Proposed Action Alternative

Impacts from Construction: The proposed project would not be expected to create a change in population because jobs associated with pipeline replacement are expected to be similar to current levels. In addition, construction workers would likely reside in the local area and therefore would not have an impact on housing.

During the construction phase of the project a temporary increase in economic activity would result from purchases of supplies and services from local contractors. Most of the work would be sourced to a local contractor through a competitive bid process. This is not expected to increase the workforce and no new positions would be created during the construction phase. The cost of construction is considered insignificant compared to the overall construction/maintenance budget for Holloman AFB.

Construction expenditures for the pipeline project are projected to be approximately \$1,190,00 over a 200-day period in the spring of 2007. By comparison, construction contracts for Holloman AFB totaled \$45 million for FY2003. The proposed construction activity would generate a number of direct construction-related jobs for the duration of the project. The regional construction industry could accommodate the proposed project, since proposed construction would represent a continuation of the economic activity generated in the region by Holloman AFB. No significant short- or long-term impacts are expected to socioeconomic resources from implementation of the Proposed Action.

Impacts from Operation/Use: Operation of the new San Andres water line is not expected to have any impact on socioeconomic conditions in the area.

4.4.2.2 No Action Alternative

No changes would be made to baseline conditions. Minor repairs would continue to be made, but would not impact population or earnings of the area.

4.4.2.3 Alternative C – Remove and Replace

Effects from Alternative C would be similar to those described above for the Proposed Action. However, expenditures would be greater overall because this alternative would also include demolition. Increased costs would be related to excavation of the existing pipeline,

as well as any crushing, hauling, and landfill disposal costs that may apply. No significant short- or long-term impacts are expected.

4.5 ENVIRONMENTAL JUSTICE

4.5.1 Methodology

Data on minority and low-income populations for Otero County were extracted from data compiled by the U.S. Census Bureau. Total, minority, and low-income populations were described for the county and City of Alamogordo in order to address the potential for disproportionately high or adverse human health or environmental effects on these communities.

4.5.2 Potential Impacts

4.5.2.1 Proposed Action Alternative

Impacts from Construction: The percentage of individuals in the minority or low-income categories in Otero County is less than the 50 percent threshold. Minority and low-income populations in the vicinity of Holloman AFB are consistent with regional and state levels of these populations. Based on available information, no disproportionately high and/or adverse human health or environmental effects on minority and/or low-income communities are projected from construction activities related to the Proposed Action. As a result no impacts with regard to environmental justice are anticipated. Implementation of this alternative would not result in any increased environmental health risks or safety risks to children.

Impacts from Operation/Use: Operation of the new pipeline would have no effect on environmental justice issues. Activities at Boles Wells Field and surrounding properties would continue uninterrupted by this project. No long-term substantial impacts would be expected to occur.

4.5.2.2 No Action Alternative

No changes would be made under the No Action alternative and no impacts with regard to environmental justice are anticipated.

4.5.2.3 Alternative C – Remove and Replace

For the reasons described above for the Proposed Action, no impacts with regard to environmental justice are anticipated from this alternative. Implementation of this alternative would not result in any increased environmental health risks or safety risks to children.

4.6 CULTURAL RESOURCES

4.6.1 Methodology

Impacts to cultural resources from the proposed project and alternatives can result from construction effects related to installation of the new pipeline or maintenance of the existing pipeline. Impacts to cultural resources were assessed by accessing the NMCRIS database to identify any previously recorded archeological sites within 1 mile of the project area and completing an intensive pedestrian survey of the APE. A cultural resources report has been prepared for this project, and in consultation with the State Historic Preservation Office (SHPO), a determination will be made as to whether the effects of the proposed project and alternatives would be adverse, and where appropriate, measures will be identified to avoid, reduce, or otherwise mitigate those effects.

4.6.2 Potential Impacts

4.6.2.1 Proposed Action Alternative

Impacts from Construction: The six IOs that were recorded in the APE are not eligible for nomination to the NRHP and so the Proposed Action would not result in an adverse effect to these resources.

The Proposed Action would have no effect on the four previously recorded sites (LA 104261, LA 104268, LA 104269, LA 113707) that are within approximately 500 feet of the proposed water line, as long as all construction activity stays within the proposed disturbance corridor.

The two previously recorded sites (LA 100168, LA100170) that are transected by the proposed water line retain their integrity and are eligible for inclusion on the NRHP. Site LA 100168 (HAR-017) is a large prehistoric artifact scatter from the Late Archaic/Formative period originally recorded by Tagg (1993) and rerecorded by O'Leary (1994). Site LA100170 (HAR-019) consists of a prehistoric artifact scatter with fire-cracked rock features and a historic farm and ranch originally recorded by Tagg (1993) and investigated by

Hawthorne (1994). Both sites are transected by the current pipeline and extend some distance beyond either side of the proposed disturbance corridor of the new pipeline. Therefore, avoidance of these sites likely cannot be achieved during construction of the new pipeline. It is recommended that any ground disturbance activity in these areas be monitored by a professional archeologist in order to document any subsurface cultural deposits.

Impacts from Operation/Use: Once construction is complete no effects to cultural resources would result from operation of the pipeline. Therefore, no long-term impacts are anticipated.

4.6.2.2 No Action Alternative

Continued maintenance of the existing pipeline under the No Action alternative would affect existing cultural resources within the disturbance corridor. Specifically, two previously recorded sites (LA 100168, LA100170) are transected by the existing water line. These sites retain their integrity and are eligible for inclusion on the NRHP. These two sites would be negatively impacted by a waterline break in their vicinity by 1) flooding and 2) repair activities. Any maintenance activities that would be required in the vicinity of these sites should be monitored by a professional archeologist in order to document any subsurface cultural deposits.

4.6.2.3 Alternative C – Remove and Replace

Effects to cultural resources under Alternative C would be the same as those described for the No Action and Proposed Action alternatives. The two previously recorded sites (LA 100168, LA100170) are transected by the existing water line and would be affected by replacing the water line with a new one in the same alignment. These sites retain their integrity and are eligible for inclusion on the NRHP. Any ground disturbance activity in these areas would need to be monitored by a professional archeologist in order to document any subsurface cultural deposits.

4.7 BIOLOGICAL RESOURCES

4.7.1 Methodology

Impacts to biological resources would occur primarily from construction activities related to installation of 2.3 miles of pipeline within or adjacent to the existing water line alignment. Potential impacts to biological resources, defined more fully in Section 3.8 above, were

assessed, including both short-term effects of construction activity and long-term effects of pipeline maintenance on vegetation, wildlife, and sensitive species.

4.7.2 Potential Impacts

4.7.2.1 Proposed Action Alternative

Vegetation

Impacts from Construction: Approximately 7 acres of land within the pipeline corridor have been previously cleared of most vegetation (see Figures 2-1 to 2-3). Vegetation was previously removed during actions related to installation and maintenance of the existing water line and/or construction and use of Taylor Ranch Road and the Old El Paso Highway. Construction activities related to excavating soil for the new water line and blading the area following its placement may remove an insignificant number of common shrubs and herbaceous vegetation along the proposed pipeline corridor, but would not significantly expand the existing clear zone.

A few ephemeral, natural drainages of varying width and depth are present along the proposed pipeline corridor. Vegetation in these drainages is similar to that of the surrounding uplands, as moisture is retained here for extremely short periods of time and only during precipitation events. There are no wetlands affected by this project.

Freshly disturbed areas may encourage the spread of noxious weeds known to occur in the Boles Wells Field property (African rue and Russian knapweed). Noxious weed control efforts practiced by Holloman AFB in coordination with the Otero Soil Conservation District would prevent or minimize the spread of these species.

Impacts from Operation/Use: Once construction is complete no effects to vegetation would result from operation of the pipeline. Therefore, no long-term impacts are anticipated.

Wildlife

Impacts from Construction: Although intensive wildlife surveys were not conducted in preparation of this EA, species composition within the area is generally known from previous surveys. An insignificant proportion of vegetation would be impacted as a result of the proposed project, as most of the area within the proposed pipeline corridor has previously been cleared and graded. Therefore no critical habitat would be affected by the Proposed

Action. Individual animals may be temporarily displaced by the noise and other activity related to installation of the new water line, but these effects would be short-term and localized and most animals could reoccupy habitat once work is complete.

Impacts from Operation/Use: No significant long-term effects on wildlife species are anticipated from operation of the pipeline once construction is complete.

Sensitive Species

Impacts from Construction: Both the Texas horned lizard and the loggerhead shrike are known to occur in the area. Sandy soils do occur within the project area, which is required by horned lizards for burrowing and hibernating. The defensive mechanism of remaining motionless and attempting to blend into the environment may cause this species to be susceptible to direct mortality and/or injury from movement of construction equipment. Hibernation burrows may also be affected during winter months as a result of ground-breaking activity associated with the proposed project. Loggerhead shrikes are known to occur in the area, but impacts to populations would be expected to be minimal, if occurring at all. Any individuals present in the proposed project area could temporarily relocate during construction and reoccupy habitat once work is complete. Birds nesting adjacent to the project corridor, potentially including neotropical migratory species, would not be directly affected but may be sensitive to disturbance, particularly early in the nesting season, when eggs or nestlings are present. Both the NMDGF and the USFWS have been contacted for concurrence on the determination that the Proposed Action is not reasonably expected to cause a significant short- or long-term impact to these species.

Impacts from Operation/Use: Once construction is complete no effects to sensitive species would result from operation of the pipeline. Therefore, no long-term impacts are anticipated.

4.7.2.2 No Action Alternative

Under the No Action alternative, an insignificant number of common shrubs and herbaceous vegetation might be removed along the existing pipeline as equipment is brought in to repair the leaking pipe. However, the current water line corridor is generally clear of most vegetation. Individual animals may temporarily be displaced by the noise and other activity related to maintenance and repair of the existing water line, but these effects would be short-term and localized, but recurring, and most animals could reoccupy habitat once repairs are

complete. Sensitive species in the project area (Texas horned lizard and loggerhead shrike) are not reasonably expected to be significantly impacted in either the short- or long-term by this alternative.

4.7.2.3 Alternative C – Remove and Replace

Effects to biological resources under Alternative C would be the same as those described above for the Proposed Action alternative. Under this alternative an insignificant number of common shrubs and herbaceous vegetation might be disturbed along the existing pipeline alignment as the current pipeline is removed and replaced. Individual animals may be temporarily displaced by noise and other construction activity, but these effects would be short-term and localized, although lasting longer than the Proposed Action.

4.8 NOISE

4.8.1 Methodology

Noise impacts are considered qualitatively. The type of noise, noise sources, and duration are described generally. The degree of impact from noise is characterized generally based on the sensitivity of affected areas to noise, and relative changes to the ambient noise environment.

4.8.2 Potential Impacts

4.8.2.1 Proposed Action Alternative

Impacts from Construction: Noise would be generated by construction activities, although typical equipment to be used would not produce greater noise volumes than the residential construction activities typical for the area. Noise would be generated intermittently from the work site during normal working hours until completion and would be greater than normal at times. Construction work would occur during daylight hours when loud noises are more tolerable. Only insignificant impacts are anticipated during the construction phase.

Impacts from Operation/Use: After completion, noise levels would consist of background noise from the adjacent residential areas and normal vehicle traffic. Therefore, no long-term impacts are expected.

4.8.2.2 No Action Alternative

Noise levels would be increased during repair of the existing pipeline. These short periods of increased noise would be temporary and localized occurring only for the duration of the repair.

4.8.2.3 Alternative C – Remove and Replace

Effects from Alternative C would be similar to those described above for the Proposed Action. Noise levels would be increased for a longer duration because this alternative involves not only installation of the new pipeline but also excavation and removal of the existing pipeline. For that reason, construction equipment would be in the area longer and additional equipment may be needed for excavation, crushing, and hauling.

4.9 SOIL RESOURCES

4.9.1 Methodology

Published soil surveys for Otero County (NRCS 1988) were used to describe the affected soil environment. The impact analysis is qualitative and is based on the assumption that most of the impacts would occur during construction of the pipeline, that soil disturbed by excavation is susceptible to wind erosion at any time during the year, and that soil disturbed by construction is susceptible to water erosion during precipitation events. Temporary and permanent stabilization of disturbed soils would minimize offsite impacts on air and water resources.

4.9.2 Potential Impacts

4.9.2.1 Proposed Action Alternative

Impacts from Construction: Activities related to excavation and installation of the new pipeline would result in up to 7 acres of ground disturbance (2.3-mile long corridor by 6-foot wide trench plus up to 10 feet on each side for potential construction-related disturbance) plus disturbance to any staging areas. Almost all of the soils that would be disturbed by installation of the new pipeline are in areas that have already been disturbed by activities related to use and maintenance of Taylor Ranch Road and the Old El Paso Highway (on the southern 1.05 miles of the proposed pipeline) or repair of the existing pipeline. The proposed

staging area is just inside the fence surrounding the Boles Wells Field in a previously disturbed area (see Figure 2-3).

Under the Proposed Action, all disturbed soils would be returned to their original (or improved) condition as part of the process. The current pipeline lies under the center of a portion of Taylor Ranch Road and, under the preferred alternative, would be abandoned in place. The new pipeline would be placed within the road corridor, but outside of the driving surface. The county anticipates chip-sealing the road surface in 2007, which would reduce wind and water erosion along that route. Applicable construction BMPs, such as a SWPPP and silt fencing, described in Section 2.1.3 above, would reduce the potential for impacts to soils and air and water quality and ensure compliance with the CWA and NPDES. Therefore, disturbance to soils would be short-term and localized since construction activities would be confined to the current road easement and water line disturbance corridor.

Impacts from Operation/Use: Once construction is complete no effects to soils would be expected except for unanticipated maintenance activities. Therefore, no long-term impacts to soils are anticipated.

4.9.2.2 No Action Alternative

Under the No Action alternative, soils would continue to be disturbed as a result of pipeline breakages requiring maintenance. The current water line has been in use for over 50 years and breaks are increasingly frequent, resulting in both soil erosion, as water flows out of the break, and soil disturbance, as heavy machinery is brought in to repair the pipe. Disturbance to soils would be localized but long-term as breaks in the existing water line became more frequent as the pipe deteriorates. Because breakage locations along the existing pipeline cannot be predicted, installing silt fencing or executing other BMPs along the water line corridor to reduce the potential for impacts to soils and air and water quality is impractical.

4.9.2.3 Alternative C – Remove and Replace

Effects to soils under Alternative C would be similar to those described above for the Proposed Action alternative. Under this alternative up to 7 acres of ground disturbance would occur as the existing pipeline is replaced by a new one in the same alignment. Most of the disturbance would occur in previously disturbed soils however, under this alternative more of the pipeline alignment would be under the existing road resulting in greater

disturbance to the road surface rather than to native soils. Applicable construction BMPs, such as a SWPPP and silt fencing, would reduce the potential for impacts to soils and air and water quality and ensure compliance with the CWA and NPDES. Therefore, disturbance to soils would be short-term and localized since construction activity would be confined to the current road easement and water line disturbance corridor. No long-term impacts to soils are anticipated.

4.10 WATER RESOURCES

4.10.1 Methodology

The potential for impacts to water resources would result from surface disturbance during construction. Surface water quality could be impacted if soils susceptible to water erosion contribute sediment to surface water. All of the natural drainages within the project area are ephemeral. Vegetation at these drainages is similar to that of surrounding uplands, as moisture is retained here for extremely short periods of time and only during precipitation events. Groundwater beneath the project area is recharged by surface and subterranean flow from the mountains to the east and is unlikely to be affected by this project. There are no wetlands affected by this project.

4.10.2 Potential Impacts

4.10.2.1 Proposed Action Alternative

Impacts from Construction: Excavation and heavy equipment impaction would have localized effects and would not result in significant secondary impacts to water resources. The potential for spills exists from fuel, lubricants, or other fluids from small portable fuel containers, generators, heavy equipment, and light-duty vehicles. In compliance with State of New Mexico Ground and Surface Water Quality Protection Regulations (New Mexico Administrative Code, Title 20 Environmental Protection, Chapter 6 Water Quality), any spills that occur during construction would be cleaned up and disposed of properly.

In compliance with the NPDES Stormwater General Permit, a site-specific Stormwater Pollution Prevention and Erosion and Sediment Control Plan would be developed. The plan would identify BMPs appropriate for the site and steps to minimize wind erosion, to reduce offsite sedimentation due to water erosion, and to keep increases in surface water runoff to a minimum.

BMPs would minimize soil erosion, and the disturbed areas would be regraded and stabilized soon after construction. At all drainage crossings within the pipeline alignment, construction crews would be instructed that blocking any drainage course is not acceptable, thus preventing disruption of flow during rainfall events and the subsequent potential for water to back up onto upstream properties. Practices to minimize soil loss and downstream sedimentation would result in no expected impacts to water quality.

Impacts from Operation/Use: After construction is complete, all disturbed areas would be stabilized by recontouring and revegetating if necessary to minimize erosion and improve infiltration of precipitation. No impacts to water resources are expected once construction is complete.

4.10.2.2 No Action Alternative

Under the No Action alternative the existing pipeline would continue to deteriorate and require on-going maintenance to repair ruptures and leaks. Each time this occurs, equipment is brought in to excavate soil at the broken portion of the pipe and make repairs. Water and soil erosion would continue to occur whenever there was a break in the pipeline, potentially affecting water quality. The potential for impacts would be temporary and localized, lasting only the duration of the repair, and would be mitigated by standard construction BMPs.

4.10.2.3 Alternative C – Remove and Replace

The amount of disturbance under Alternative C, and therefore the effects would be similar to those described above for the Proposed Action alternative. Because the existing pipeline alignment is under a portion of the existing road, this alternative would result in greater disturbance to the road surface than to native soils, possibly resulting in less potential for impacts on water quality.

4.11 AIR QUALITY

4.11.1 Methodology

Air emissions resulting from the proposed alternatives were evaluated in accordance with federal, state, and local air pollution standards and regulations. The analysis included assessing potential impacts from ground disturbance activities along the pipeline, and emissions from construction equipment and vehicles at the site. According to the New

Mexico Air Quality Bureau (NMAQB), actions are not regulated under state or federal Prevention of Significant Deterioration (PSD) regulations if they include only fugitive dust and mobile source emissions (HAFB 2005).

Air quality impacts from an action would be significant if they:

- Increase ambient air pollution concentrations above any NAAQS
- Contribute to an existing violation of any NAAQS
- Interfere with or delay timely attainment of NAAQS
- Impair visibility within any federally mandated PSD Class I area.

Air quality impacts during construction activities would occur from particulate emissions (i.e., fugitive dust) during ground clearing and grading activities and activities and vehicular emissions from construction equipment and workers' vehicles. Emissions from construction activities include contributions from engine exhaust emissions (i.e., construction equipment, material handling, and worker's travel) and fugitive dust emission (e.g., from grading and excavation activities). Demolition emissions would include fugitive dust and transport of demolition debris offsite. Trenching and grading would result in fugitive dust from ground disturbance, plus combustion emissions from heavy equipment from trench work during the construction period.

Emissions would occur over the duration of the construction period and would be spread over approximately 200 days. Emissions generated by construction are temporary in nature and would end when construction is complete. Implementation of control measures in accordance with standard construction practices would reduce emissions from fugitive dust. Application of water to exposed soil, proper soil stockpiling methods, and prompt ground cover replacement could all be used to minimize dust generation during construction.

4.11.2 Potential Impacts

4.11.2.1 Proposed Action Alternative

Impacts from Construction: Air emissions from construction activities under the Proposed Action alternative would be similar to those produced during typical light-construction activities. Light-duty and heavy-duty trucks would be used to deliver new pipeline materials to specific installation areas and move soil within the project area. Fugitive dust from

equipment travel and activity would also be produced, from movement of small numbers of contractor vehicles during construction activity. Topography and meteorology of the area in which the project is located would not seriously restrict dispersion of the air pollutants.

During construction short-term adverse effects on air quality may result from dust and exhaust emissions. Particulate matter emanating from construction activities would be controlled in accordance with applicable NMED regulations. Any emissions discharged during construction of the proposed project are not expected to cause an increase in local air pollutant concentrations beyond state and federal standards at any time. Only insignificant short-term impacts are expected from the construction phase of the proposed project. No long-term impacts to air resources would be anticipated. Emissions from grading and trenching are conservatively estimated at 0.04 ton CO, 0.05 ton NO_x, 0.01 ton SO_x, and 0.14 ton PM₁₀.

Impacts from Operation/Use: Operation of the new pipeline would not result in any effects to air quality. In the long-term, repairs may be warranted that would require ground disturbance, resulting in localized air quality effects for the duration of the repair.

4.11.2.2 No Action Alternative

Under the No Action alternative, air emissions would be identical to those under baseline conditions. Repairs would continue to be made as needed resulting in short-term, temporary air quality impacts related to ground disturbance.

4.11.2.3 Alternative C – Remove and Replace

Effects under Alternative C would be similar to those described for the Proposed Action. Construction along the water line would produce temporary emissions from trenching and grading during the pipeline installation. Because this alternative also involves removal of the existing pipe, air quality impacts would be greater because of the potential for emissions from crushing and hauling debris away from the site. These emissions would be localized, temporary, and short-term and would not result in long-term impacts on air quality.

4.12 WASTE MANAGEMENT

4.12.1 Methodology

Impacts on solid waste facilities and surrounding areas caused by waste generation and hazardous waste movement are assessed by examining current conditions and anticipating the effect of the proposed project. Reduction in life span of solid waste facilities that would require near-term expansion of capacity (within 5 years) would potentially be considered a significant impact. Any generation of hazardous waste from the proposed project, or the handling of existing hazardous waste in the project area, would be examined by type of waste, amount of waste, and available options for disposal.

4.12.2 Potential Impacts

4.12.2.1 Proposed Action Alternative

Impacts from Construction: No hazardous waste would be generated by the proposed pipeline installation and solid waste facilities would not be impacted. No short- or long-term impacts are expected from the Proposed Action.

Impacts from Operation/Use: Operation of the pipeline would not involve any waste management.

4.12.2.2 No Action Alternative

Under this alternative, the pipeline would not be replaced and repairs would continue to be made as needed. Future repairs to the pipeline could require excavation beneath the new road surface, depending on the location of the break. Waste generated could include the broken portion of the existing pipeline that is removed as well as road surface materials that are damaged during excavation. The amount of waste generated by this alternative would not affect the lifespan or capacity of the Otero-Lincoln County Landfill.

4.12.2.3 Alternative C – Remove and Replace

Alternative C includes removal of the existing pipeline. Waste generated would include the existing pipe to be removed and any road surface materials that are damaged during excavation. The existing concrete pipeline is in 33-foot sections, with each section weighing approximately 8,000 pounds. Wastes would be hauled to the Otero-Lincoln County Landfill. Removal of 2.3 miles of pipeline (approximately 368 sections) would generate a substantial

amount of waste (approximately 1,470 tons), but because the landfill is sufficiently large and was designed to accommodate construction debris, this alternative is not anticipated to affect the lifespan of the landfill.

4.13 SAFETY

4.13.1 Methodology

Issues addressed in this section relate to potential impacts to public and occupational health and safety. Impacts are considered significant if the health or safety of the public or Holloman AFB or contractor personnel is adversely affected.

4.13.2 Potential Impacts

4.13.2.1 Proposed Action Alternative

Impacts from Construction: Construction to implement the Proposed Action would present common construction hazards and impacts. All construction work on the site would occur within the guidelines of relevant procedures and controls to ensure that appropriate industrial safety precautions are followed to prevent accidents and injuries. The traffic/safety plan developed by the construction contractor would define any special procedures to address safety and access during the construction phase. Appropriate signage and detours to maintain access for residents and local users would be provided. Impacts would be short-term and temporary, occurring only for the duration of the construction period.

Impacts from Operation/Use: Once construction is complete no effects to public or personnel safety would result from operation of the pipeline.

4.13.2.2 No Action Alternative

Under the No Action alternative repairs would continue to be made to the existing pipeline. Repairs would present the same common construction hazards and impacts described for the Proposed Action alternative. However, because the repairs would be much smaller and the duration of the construction would be shorter, the potential for impacts to personnel and public safety would be reduced in the short term. In the long term, this alternative would require repeated repairs and possibly exceed the impacts of a single project to replace the pipeline.

4.13.2.3 Alternative C – Remove and Replace

Alternative C would involve demolition as well as construction of the new pipeline. These actions would present the same common construction hazards and impacts described for the Proposed Action alternative. All activities would be designed to comply with safety criteria and guidelines and standard construction BMPs would be followed by contractors. Impacts would be short-term and temporary, occurring only for the duration of the construction period; no long-term effects would result.

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5.0 CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

5.1 CUMULATIVE EFFECTS

5.1.1 Definition of Cumulative Effects

Cumulative impacts on environmental resources result from incremental impacts of an action, when combined with other past, present, and reasonably foreseeable future projects in the area. Cumulative effects may arise from single or multiple actions and may result in additive or interactive effects (CEQ 1997b). Cumulative impacts can result from minor, but collectively substantial actions, undertaken over a period of time by various agencies (federal, state, and local) or individuals.

In accordance with NEPA (CEQ 1987), a discussion of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the near future is presented here. Future actions proposed in the area may require site-specific NEPA analysis prior to implementation. Past and present actions and reasonably foreseeable future actions with the potential to contribute to cumulative effects are discussed below followed by an analysis of cumulative effects.

5.1.2 Past, Present, and Reasonably Foreseeable Actions

In general, resources within Otero County are being affected by urban growth, increased recreation use, and periodic drought. Specific projects in or near the project area, including reasonably foreseeable future actions, with the potential to cumulatively affect the same resources as the alternatives presented in Chapter 2 are described in this section.

Improvements have been completed in the last 5 years to US 54 to the west of the project area. The road was widened to four lanes in this area resulting in ground disturbance in the existing highway right-of-way. Soil and vegetation disturbance were the main impacts that resulted from the project; none of the effects were determined to be significant.

A fencing project at Boles Wells Field is underway. The project involved sealing individual wellheads within the property in concrete vaults and enclosing them with 100 × 100 foot fences of 10-foot high chain link. Construction during that project was restricted to small areas of existing disturbance immediately surrounding the wellheads. No significant effects resulted.

A 1300-foot section of chain link fence was recently installed on U.S. Air Force property to replace a deteriorated boundary line fence along the Old El Paso Highway right-of-way, about 1 mile south of the Boles Wells Field. This project was authorized as routine maintenance not requiring an EA; environmental concerns were considered during the approval process but no significant effects were identified.

A project to repair and improve the Boles Wells Field perimeter fence has also recently been initiated. An environmental analysis for this project did not identify any significant effects on resources in the area after implementation of BMPs.

The county is planning to chip seal Taylor Ranch Road in 2007. This project will result in temporary disturbance of the road and will cause disruption of traffic at times. No long-term adverse effects are anticipated from this project.

Other security improvement projects may be proposed for other areas of the BWWSA, as funding may become available. Such projects would be from 1 to 12 miles away from the Boles Wells Field, not contiguous, and considerably smaller in area than other projects already analyzed and authorized. The latter two projects could be considered reasonably foreseeable but there is no effective means of predicting when, or if, they would occur. NEPA compliance for these projects would be completed prior to implementation.

Low-density residential development is occurring in surrounding areas such as the Taylor Ranch and Boles Acres residential areas. This trend will likely continue on undeveloped private land near the project area. The *Alamogordo Comprehensive Traffic Study* (URS Greiner 1998) identifies the area east of US 54 as one of the primary residential growth areas over the next 10 to 20 years.

The Prather water main connects the City of Alamogordo water supply from the Bonito Lake water allotment to the Holloman AFB water system. A 4-mile segment runs north to south along Hamilton Road in the City of Alamogordo from the US 70 overpass south to the BWWSA, approximately 0.32 miles northwest of the Boles Wells Field storage tanks. This pipeline was installed in 1958 and leaks and bursts on a recurring basis, much like the San Andres Line. An analysis to replace that pipeline has also been initiated, and environmental effects would likely be similar to those analyzed in this EA.

5.1.3 Analysis of Cumulative Effects

All resource values addressed in Chapter 3 have been evaluated for cumulative effects. If through mitigation, design features, etc., there is no net effect to a particular resource from the action, no cumulative effects can result.

Impacts of most of the projects discussed above are similar to those of the proposed pipeline project. The wellhead protection project, Boles Wells Field perimeter fence, and potential additional perimeter fencing projects all cause temporary ground disturbance of a localized area. Other possible BWWSA security improvement fencing projects would have similar effects but would likely occur on smaller, geographically separated parcels. All are located in similar settings and would use similar construction procedures, equipment, and BMPs.

The Taylor Ranch Road chip seal project is the only project that has occurred in the same location as the pipeline project (i.e., the southern portion of the pipeline alignment is along Taylor Ranch Road). The pipeline project would redisturb one section of the road but the remainder of the new pipeline disturbance would occur east of the road in the easement. The pipeline project would cause traffic disruption and other temporary effects from construction activities similar to effects from the chip seal project.

None of the effects from these projects are considered significant individually and, due to spatial and temporal separation and the fact that most of the effects are temporary (lasting mainly for the duration of construction), cumulative effects are not expected to be significant.

5.2 ADDITIONAL DISCLOSURES

This section addresses additional issue areas that must be addressed as part of a NEPA analysis. The analysis in this document used the best available information to estimate environmental impacts; conservative assumptions were made to estimate effects where information was unavailable. Unavoidable adverse effects are disclosed where they are anticipated. Holloman AFB would follow accepted conservation and mitigation measures to minimize potential effects to resources and energy requirements and conservation measures would not be affected.

5.2.1 Irreversible and Irretrievable Commitment of Resources

The irretrievable and irreversible commitments of resources that are associated with each alternative are summarized in this section. An irreversible commitment of resources is

defined as the loss of future options. The term applies primarily to the effects of using nonrenewable resources, such as minerals or cultural resources, or to the loss of an experience as an indirect effect of a permanent change in the nature or character of the land. Irreversible commitments are those that cannot be reversed, except perhaps in the extreme long-term.

An irretrievable commitment of resources is defined as the loss of production, harvest, or use of natural resources. The amount of production foregone is irretrievable, but the action is not irreversible. If the use changes, it is possible to resume production. Irretrievable commitments are those that are lost for a long period of time.

Irretrievably and irreversibly committed resources are those that are consumed during the construction and implementation of a project and that cannot be reused. Because their reuse is impossible, they are considered irretrievably and irreversibly committed to the development of the proposed project. These resources would include expendable materials necessary for construction, as well as fuels and other forms of energy that are utilized during project implementation.

During construction activities under all alternatives, non-renewable resources would be consumed. Because the reuse of these resources may not be possible, they could be considered irreversibly and irretrievably committed should the actions be implemented. Fossil fuels, labor, and highway construction materials would be expended in the project; these are generally not retrievable. Expenditure of public funds, which are not retrievable, would also be required. Soils and vegetation would be disturbed during construction but the effects would be temporary; it would be possible to rehabilitate impacted areas and return them to their preconstruction state.

5.2.2 Relationship of Short-Term Uses and Long-Term Productivity

The short-term use of resources and impacts of construction are consistent with the maintenance and enhancement of long-term productivity for the area.

6.0 LIST OF PREPARERS

A list of Holloman AFB and contract personnel involved in the preparation of this EA is included as Table 6-1.

Table 6-1. Individuals Involved in the Preparation of the EA.

Name	Title
Roger Berry	Civil Engineer, Water Projects Manager 49 CES/CEV Holloman AFB
Jonathan Damp, PhD	Archaeologist, North Wind, Inc.
Jeanne Dye	Natural Resources Manager, 49 CES/CEV Holloman AFB
Jace Fahnestock, PhD	Botanist, Project Manager, North Wind, Inc.
Rusty Gilbert, P.E.	Program Manager, North Wind, Inc.
Andrew R. "JR" Gomolak	Historic Properties Manager, Acting Chief NEPA 49 CES/CEV Holloman AFB
Kelly Green	NEPA Specialist, North Wind, Inc.
Jon Harrison, E.I.T.	Civil Engineer, North Wind, Inc.
Kim Kearney	Vice President, Southwest Operations North Wind, Inc.
Kelly Livingston	Environmental Engineer, EA Project Manager > 12/06 49 CES/CEV Holloman AFB
Daniel Camacho, 1 st Lt, E.I.T.	Mechanical Engineer, EA Project Manager < 1/07 49 CES/CEV Holloman AFB
Scott Webster	Biologist, North Wind, Inc.
Tom Zink	Government Project Manager, U.S. Army Corps of Engineers, Omaha District

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7.0 PERSONS AND AGENCIES CONTACTED

A list of the agencies and organizations contacted during the preparation of this document is presented in Table 7-1.

Table 7-1. Agencies and Organizations Contacted.

Name	Title	Affiliation
Donald Carroll	Mayor of Alamogordo	City of Alamogordo, New Mexico
Bill Burt	Committee Board Member	Committee of Fifty, Alamogordo, New Mexico
Toots Green	Committee Board Member	Committee of Fifty, Alamogordo, New Mexico
Ned Farquhar	New Mexico Single Point of Contact	Energy and Environmental Policy Advisor, Santa Fe, New Mexico
Gedi Cibas	Environmental Impact Review Coordinator	New Mexico Environment Department, Santa Fe, New Mexico
Lisa Kirkpatrick	Division Chief, Conservation Services Division	New Mexico Department of Game and Fish, Santa Fe, New Mexico
Glenn Bixler or Jim Mace	U.S. Army Corps of Engineers	Fort Worth District Fort Bliss, Texas
Frances Martinez	Public Contact Representative	Bureau of Land Management, Las Cruces District Office, Las Cruces, New Mexico
Susan MacMullin	U.S. Fish and Wildlife Service	Ecological Services Field Office, Albuquerque, New Mexico
Pat McCourt	City Manager	City of Alamogordo, Alamogordo, New Mexico
Clarissa McGinn	County Commissioner	Otero County Commission, Alamogordo, New Mexico
Doug Moore	Chairman, Otero County Commission	Otero County Commission, Alamogordo, New Mexico
Martin Moore, Ph.D.	County Administrator	Otero County, Alamogordo, New Mexico
Bill Lee Parker	County Engineer	Otero County Public Works, Alamogordo, New Mexico
Katherine Slick	New Mexico State Historic Preservation Officer	Department of Cultural Affairs Historic Preservation Division, Santa Fe, New Mexico

A list of individuals and additional organizations that received the project scoping materials and/or the Draft EA and FONSI is in the project file at Holloman AFB.

A copy of the Public Notice which was published in Alamogordo Daily News on (*insert date*), the Holloman AFB Sunburst on (*insert date*), and posted on the Commander's Channel on cable TV on (*insert date*) is included in Appendix B.

ACRONYMS

AAA	Annual Arithmetic Mean
ACEC	Area of Critical Environmental Concern
AFB	Air Force Base
AFI	Air Force Instruction
APE	Area of Potential Effect
BEAR	Basic Expeditionary Airfield Resources
BLM	Bureau of Land Management
BMP	Best Management Practice
BWWSA	Boles Wells Water System Annex
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	Carbon monoxide
CWA	Clean Water Act
DOD	Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
FE	Federal Listed Endangered
FONSI	Finding of No Significant Impact
FSC	Federal Species of Concern
FT	Federal Listed Threatened
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
IO	Isolated Occurrence
µg/m ³	micrograms per cubic meter
mph	miles per hour
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NMAAQS	New Mexico Ambient Air Quality Standards
NMAQB	New Mexico Air Quality Bureau
NMCRIS	New Mexico Cultural Resource Information System
NMDGF	New Mexico Department of Game and Fish
NMED	New Mexico Environment Department
NO ₂	Nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O ₃	Ozone
OCEDC	Otero County Economic Development Council
OSHA	Occupational Safety and Health Association

Pb	Lead
PM _{2.5}	Respirable particulate matter less than 2.5 micrometers in diameter
PM ₁₀	Respirable particulate matter less than 10 micrometers in diameter
ppm	parts per million
PRV	pressure relief valve
PSD	Prevention of Significant Deterioration
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
SE	State Listed Endangered
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO ₂	Sulfur dioxide
SS	State Rare and Sensitive Species
ST	State Listed Threatened
SWPPP	Storm Water Pollution Prevention Plan
U.S.	United States
USC	United States Code
USFWS	United States Fish and Wildlife Service

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APPENDIX A – Draft EA Notice of Availability

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DEPARTMENT OF THE AIR FORCE

HEADQUARTERS 49TH FIGHTER WING (ACC)
HOLLOMAN AIR FORCE BASE, NEW MEXICO

FEB 28 2007

Brigadier General David L. Goldfein
Commander, 49th Fighter Wing
490 First Street, Suite 1700
Holloman AFB NM 88330

Dear Neighbors

Holloman AFB proposes to repair 2.3 miles of the existing San Andres Pipeline. This water line is located south of Alamogordo, NM. It crosses Taylor Ranch Road and parallels the Old El Paso Highway in Otero County, as shown on the map at Attachment 1.

This pipe, installed in the '50s, has severely deteriorated and needs repair. We are considering repairing or replacing the old pipe. The existing easement will accommodate all of these alternatives.

A draft Environmental Analysis and a "Finding Of No Significant Impact" have been prepared for this project. These documents will be available to the public on 15 March 2007 at both the Alamogordo Public Library and the Holloman AFB Library. The 30-day review and comment period will then begin and last until 15 April 2007. These documents are also available online at <http://www.a7zpintegratedplanning.org/>.

A public meeting has been scheduled for 28 March 2007 at the Willie Estrada Civic Center in Alamogordo, NM. The doors will open at 6:30 pm, and the meeting will begin at 7:00 pm.

Written and verbal comments will be accepted at this public meeting. You may also send your comments to 49 FW/PA, Attn: San Andres Pipeline Replacement, 490 1st St, Room 2800, Holloman AFB, NM 88330-8277. We would appreciate having your comments by 15 April 2007. If you have any questions, you may contact the 49th Fighter Wing Public Affairs office at (505) 572-5406 or 49fw.paoffice@holloman.af.mil.

Sincerely



DAVID L. GOLDFEIN
Brigadier General, USAF
Commander

Attachments:

1. San Andres Pipeline Map
2. Distribution List

APPENDIX B – Distribution List

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Environmental Assessment San Andres Pipeline Repair

Distribution List – Interested Public

Billie M. Daniel
46 Old El Paso HWY
Alamogordo, NM 88310

Dale & Linda Ritchie
3301 N. White Sands Blvd.
Alamogordo, NM 88310

Richard & Cynthia Babin
374 Taylor Ranch Rd
Alamogordo, NM 88310

Donald Taylor
335 Taylor Ranch Rd
Alamogordo, NM 88310

Lucresha Ann Ladd
4 Old El Paso HWY
Alamogordo, NM 88310

Michael Axe
9570 E. Stella
Tucson, AZ 85730

Walter Warner
P.O. Box 625
Stockton, MO 65785

Martin D. Moore, PhD
Otero County Administrator
1000 New York Avenue, Room 101
Alamogordo, NM 88310

Doug Moore
Otero County Commission
1000 New York Ave, Room 101
Alamogordo, NM 88310

Bill Lee Parker
Otero County Commission
1000 New York Ave, Room 101
Alamogordo, NM 88310

Donald Carroll
Mayor
City of Alamogordo
1376 E. Ninth Street
Alamogordo, NM 88310

Toots Green
Committee of Fifty
1019 Canyon Road
Alamogordo, NM 88310

Bill Burt
Committee of Fifty
8 Ridge Lane
Alamogordo, NM 88310

Environmental Assessment San Andres Pipeline Repair

Distribution List – HCEP

Gedi Cibas
Environmental Impact Review Coordinator
New Mexico Environment Department
1190 St. Francis Drive
Santa Fe, NM 87502

Ned Farquhar
New Mexico Single Point of Contact
Energy and Environmental Policy Advisor
State Capitol Building, Suite 400
Santa Fe NM, 87501

Lisa Kirkpatrick
Conservation Services Division
NM Department of Game and Fish
PO Box 25112
Santa Fe NM 87504

Benjamin N. Tuggle
Acting Southwest Regional Director
US Fish and Wildlife Service
Ecological Services Field Office
2105 Osuna Road, NE
Albuquerque, NM 87113

Charles Webster
Bureau of Land Management
Public Contact Representative
Las Cruces District Office
1800 Marquess St.
Las Cruces, NM 88005

Katherine Slick, Director
Department of Cultural Affairs
Historic Preservation Division
228 East Palace Ave, Room 320
Santa Fe, NM 87501

Attn: Lisa Meyer, RPA, Archaeologist, Southeast Preservation Zone

APPENDIX C – Comments and Letters Received



BILL RICHARDSON
GOVERNOR

State of New Mexico
ENVIRONMENT DEPARTMENT
Office of the Secretary
Harold Runnels Building
1190 St. Francis Drive, P.O. Box 26110
Santa Fe, New Mexico 87502-6110
Telephone (505) 827-2855



RON CURRY
SECRETARY

CINDY PADILLA
DEPUTY SECRETARY

April 3, 2007

49FW/PA
ATTN: SAN ANDRES PIPELINE REPLACEMENT
490 1st St. Room 2800
Holloman AFB
NM 88330-8277

Dear Sirs:

RE: EA: SAN ANDRES WATER LINE REPAIR, HOLLOMAN AFB

The New Mexico Environment Department (NMED) staff reviewed the information on the above-referenced project included in your February 28, 2007, correspondence to the Department. The review is based on the received correspondence.

Surface Water Quality

The U.S. Environmental Protection Agency (USEPA) requires National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) coverage for storm water discharges from construction projects (common plans of development) that will result in the disturbance (or re-disturbance) of one or more acres, including expansions, of total land area. Because this project may exceed one acre (including staging areas, etc.), it may require appropriate NPDES permit coverage prior to beginning construction (small, one - five acre, construction projects may be able to qualify for a waiver in lieu of permit coverage - see Appendix D).

Among other things, this permit requires that a Storm Water Pollution Prevention Plan (SWPPP) be prepared for the site and that appropriate Best Management Practices (BMPs) be installed and maintained both during and after construction to prevent, to the extent practicable, pollutants (primarily sediment, oil & grease and construction materials from construction sites) in storm water runoff from entering waters of the U.S. This permit also requires that permanent stabilization measures (revegetation, paving, etc.), and permanent storm water management measures (storm water detention/retention structures, velocity dissipation devices, etc.) be implemented post construction to minimize, in the long term, pollutants in storm water runoff from entering these waters. In addition, permittees

must ensure that there is no increase in sediment yield and flow velocity from the construction site (both during and after construction) compared to pre-construction, undisturbed conditions (see Subpart 9.C.1)

You should also be aware that EPA requires that all "operators" (see Appendix A) obtain NPDES permit coverage for construction projects. Generally, this means that at least two parties will require permit coverage. The owner/developer of this construction project who has operational control over project specifications (probably the 49th Fighter Wing Holloman AFB this case), the general contractor who has day-to-day operational control of those activities at the site, which are necessary to ensure compliance with the storm water pollution plan and other permit conditions, and possibly other "operators" will require appropriate NPDES permit coverage for this project.

The CGP was re-issued effective July 1, 2003 (see **Federal Register/Vol. 68, No. 126/Tuesday, July 1, 2003** pg. 39087). The CGP, Notice of Intent (NOI), Fact Sheet, and Federal Register notice can be downloaded at: <http://cfpub.epa.gov/npdes/stormwater/cgp.cfm>.

Please be advised that the CGP does not allow discharges of well purge waters, hydro-static test waters, treated effluent, or most other "non-storm water" discharges. These types of discharges require individual NPDES permit coverage.

Drinking Water

The Department's Drinking Water Bureau (DWB) can provide plan review and comments as they relate to the drinking water supply plan of the proposed project and maintaining drinking water quality. The documents attached to your correspondence indicate no known conflicts with requirements under NMED laws and regulations. This project will require submittal of a completed construction application to the Drinking Water Bureau. The public water supply engineering and construction will be required to comply with New Mexico Drinking Water Regulations.

Air Quality

Holloman AFB is located in Otero County, which is considered to be in attainment with all New Mexico and National Ambient Air Quality Standards.

To further ensure air quality standards are met, applicable local or county regulations requiring noise and/or dust control must be followed; if none are in effect, controlling construction-related air quality impacts during projects should be considered to reduce the impact of fugitive dust and/or noise on community members.

Potential exists for temporary increases in dust and emissions from earthmoving, construction equipment, and other vehicles, however the increases should not result in non-attainment of air quality standards. Dust control measures should be taken to minimize the release of particulates due to vehicular traffic and construction. Areas disturbed by the construction activities, within and adjacent to the project area should be reclaimed to avoid long-term problems with erosion and fugitive dust

Holloman AFB
April 3, 2007
Page 3

All asphalt, concrete, quarrying, crushing, and screening facilities contracted in conjunction with the proposed project must have current and proper air quality permits. For more information on air quality permitting and modeling requirements, please refer to 20.2.72 NMAC.

The project as proposed should have no long-term significant impacts to ambient air quality.

We appreciate the opportunity to comment on this project.

Sincerely,



Gedi Cibas, Ph.D.
Environmental Impact Review Coordinator

NMED File No. 2426ER



United States Department of the Interior

FISH AND WILDLIFE SERVICE

New Mexico Ecological Services Field Office
2105 Osuna NE
Albuquerque, New Mexico 87113
Phone: (505) 346-2525 Fax: (505) 346-2542

Attn: Mr. Sexton

APR 12 2007

Thank you for your recent request for information on threatened or endangered species or important wildlife habitats that may occur in your project area. The New Mexico Ecological Services Field Office has posted lists of the endangered, threatened, proposed, candidate and species of concern occurring in all New Mexico Counties on the Internet. Please refer to the following web page for species information in the county where your project occurs: http://www.fws.gov/southwest/es/NewMexico/SBC_intro.cfm. If you do not have access to the Internet or have difficulty obtaining a list, please contact our office and we will mail or fax you a list as soon as possible.

After opening the web page, find New Mexico Listed and Sensitive Species Lists on the main page and click on the county of interest. Your project area may not necessarily include all or any of these species. This information should assist you in determining which species may or may not occur within your project area.

Under the Endangered Species Act, as amended (Act), it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with us further. Similarly, it is their responsibility to determine if a proposed action has no effect to endangered, threatened, or proposed species, or designated critical habitat. If your action area has suitable habitat for any of these species, we recommend that species-specific surveys be conducted during the flowering season for plants and at the appropriate time for wildlife to evaluate any possible project-related impacts. Please keep in mind that the scope of federally listed species compliance also includes any interrelated or interdependent project activities (e.g., equipment staging areas, offsite borrow material areas, or utility relocations) and any indirect or cumulative effects.

Candidates and species of concern have no legal protection under the Act and are included on the web site for planning purposes only. We monitor the status of these species. If significant declines are detected, these species could potentially be listed as endangered or threatened. Therefore, actions that may contribute to their decline should be avoided. We recommend that candidates and species of concern be included in your surveys.

Also on the web site, we have included additional wildlife-related information that should be considered if your project is a specific type. These include communication towers, power line safety for raptors, road and highway improvements and/or construction, spring developments and livestock watering facilities, wastewater facilities, and trenching operations.

Under Executive Orders 11988 and 11990, Federal agencies are required to minimize the destruction, loss, or degradation of wetlands and floodplains, and preserve and enhance their natural and beneficial values. We recommend you contact the U.S. Army Corps of Engineers for permitting requirements under section 404 of the Clean Water Act if your proposed action could impact floodplains or wetlands. These habitats should be conserved through avoidance, or mitigated to ensure no net loss of wetlands function and value.

The Migratory Bird Treaty Act (MBTA) prohibits the taking of migratory birds, nests, and eggs, except as permitted by the U.S. Fish and Wildlife Service. To minimize the likelihood of adverse impacts to all birds protected under the MBTA, we recommend construction activities occur outside the general migratory bird nesting season of March through August, or that areas proposed for construction during the nesting season be surveyed, and when occupied, avoided until nesting is complete.

We suggest you contact the New Mexico Department of Game and Fish, and the New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division for information regarding fish, wildlife, and plants of State concern.

Thank you for your concern for endangered and threatened species and New Mexico's wildlife habitats. We appreciate your efforts to identify and avoid impacts to listed and sensitive species in your project area.

Sincerely,



Wally Murphy
Field Supervisor

COMMENT SHEET

San Andres Pipeline Environmental Assessment Public Information Meeting

If you wish to ensure your comments and questions are on record for consideration, please write them on this comment sheet and give it to us. If you provide your name and telephone number, it will allow us to contact you if we have questions. However, you are not required to provide this information. We require that you provide written comments to us by April 15th.

If you have any further questions, please contact the 49th Fighter Wing Public Affairs office at the following address: 49 FW/PA, Attn: San Andres Pipeline, 490 1st St, Room 2800, Holloman AFB, NM 88330-8277. Or, you may call Public Affairs at (505) 572-5406 or 49fw.paoffice@holloman.af.mil.

Comments:

Please see attachment

Billie M. Daniel 434-0877

(Name)

(Contact Info)

46 Old El Paso Highway

COMMENT SHEET

San Andres Pipeline Environmental Assessment

1. If replacement of the waterline can be accomplished as discussed at the public meeting on 28 March, on the east side of Old El Paso Highway, it would not impact me as much as it would if repair or replacement is done on the west side of Old El Paso Highway.
2. My biggest concern either way is to maintain my flood control banks.
3. If repair/replacement is done on the west side of Old El Paso Highway, my concerns are:
 - A. The pipeline will go through my flood control bank on the north side of my property. My banks have been compacted and are topped with small gravel where we drive. I would hope the disturbed ground would be put back as the contractor found it.
 - B. The pipeline will parallel my flood control bank (or even get into my bank in places). These banks have been in place for years and have turned the flood water off my property. I am afraid that once the bank is disturbed, the flood water will break through the soft ground and flood me.
 - C. The pipeline will cross the only entrance into my property. Accommodations will have to be made if my driveway is to be torn up for a long period of time.
 - D. Also, if my driveway has to be torn up, I would like to replace the 12 inch pipe which is right on top of the old waterline with a larger culvert (which I would purchase). Could the contractor do that?
4. I would hope that the contractor will insure dust and trash control and their employees have respect for people's property.
5. One last thing I would like to mention is there is approximately a 300 foot section of the barb wire fence at the north end of the Boles Wells on Old El Paso Highway was taken down in preparation of the new chain link fence project. The chain link fence project changed direction but the barb wire fence was not put back up, leaving an opening for the public to access.

Respectfully Submitted

Billie M. Daniel

Billie M. Daniel 434-0877
46 Old El Paso Highway
Alamogordo, NM 88310

COMMENT SHEET

San Andres Pipeline Environmental Assessment Public Information Meeting

If you wish to ensure your comments and questions are on record for consideration, please write them on this comment sheet and give it to us. If you provide your name and telephone number, it will allow us to contact you if we have questions. However, you are not required to provide this information. We require that you provide written comments to us by April 15th.

If you have any further questions, please contact the 49th Fighter Wing Public Affairs office at the following address: 49 FW/PA, Attn: San Andres Pipeline, 490 1st St, Room 2800, Holloman AFB, NM 88330-8277. Or, you may call Public Affairs at (505) 572-5406 or 49fw.paoffice@holloman.af.mil.

Comments:

I thought the meeting was presented very well with people that were very knowledgeable about the project. I agree with running the waterline on the east side of the Old El Paso Hwy; there will be fewer driveways = easements to deal with.

I do recommend running new 1900 waterline in lieu of slip-lining. 1900 is a proven product that will last a long time. Slip-lining is a fairly new procedure that will require an out-of-town contractor.

I would be very interested in bidding this project as we have installed several waterlines in Alamogordo and Otero County. I have been unable to find out who will be handling this project and would

(Name)

(Contact Info)

Appreciate any information you could give me.

Dean Terrell, Cherokee Enterprises

434-2347

COMMENT SHEET

San Andres Pipeline Environmental Assessment Public Information Meeting

If you wish to ensure your comments and questions are on record for consideration, please write them on this comment sheet and give it to us. If you provide your name and telephone number, it will allow us to contact you if we have questions. However, you are not required to provide this information. We require that you provide written comments to us by April 15th.

If you have any further questions, please contact the 49th Fighter Wing Public Affairs office at the following address: 49 FW/PA, Attn: San Andres Pipeline, 490 1st St, Room 2800, Holloman AFB, NM 88330-8277. Or, you may call Public Affairs at (505) 572-5406 or 49fw.paoffice@holloman.af.mil.

Comments:

Thank you for the informative meeting.
It was handled in a very timely and
professional manner.

We would like to see a completely new line
installed on the east side of Taylor Ranch
Rd & Old El Paso Hwy. Only two pieces of
private property would be involved.
Our utmost desire is for the government
to get good end results for our tax payer dollars.
A fix that will last for a long time into
the future. Thank you again

Mrs. Linda Ritchie 16 Old El Paso Hwy, Alamogordo, NJ
(Name) (Contact Info)
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